the American Perfumer
and ESSENTIAL OIL REVIEW

COSMETICS · SOAPS · FLAVORS

EST. 1906

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Editorial Comment

Christmas Greetings

Once again the time has arrived for the celebration of the anniversary of the coming of the Christ Child.

It finds us in a somewhat different mood from that typified by "God rest ye merrie gentlemen." Not very many of us will be in a merry mood this Christmas. Too many of us have members of our family exposed to the dangers of warfare, our responsibilities are too grave, our obligation too apparent, for us to indulge in the frivolities of other years. *Recent* other years, for there was a time when Christmas had a meaning which seemed to have been lost in these more current, fast moving years.

This old spirit, which it seems we have recaptured, was one of quiet meditation, of simple fun, of trees decorated with popcorn and cranberries, of children's pleasure in unpretentious toys, of slow-paced, well-ordered lives based on a realization of the meaning of Christ's teachings.

So now it appears that we have returned in the cycle of time to a point where we have regained the dignity of the spirit of Christmas. Our fighting men literally cover the face of the earth, and are engaging the enemy in hard fighting wherever they find him. They are in the process of victory, and we can begin to see the beginning of the end. We have come through a bitter presidential campaign without scars. Our lives have not had to be too rigidly regimented when judged by standards outside our own country. What threatened to offer a vicious inflation spiral seems to have been stopped. We are united in an awareness of ourselves as individuals with a responsibility to give of ourselves, and a realization that we are not alone in doing so, that our neighbors share with us equally in our efforts and in our thoughts. We are gathered into unity, we have reached pride through humility, we are great because we are in the right.

It is in this spirit that THE AMERICAN PERFUMER wishes each of you, individually, and in your own right to enjoy it. MERRY CHRISTMAS.

Hyalin

A *permanent* replacement product for Lanolin

HYALIN is a powerful concentrated water-in-oil emulsifier. It has the tackiness and the emollient properties of Lanolin, for which it can be substituted, either wholly or in part, without any other change in formulation. It is freely available in all quantities.

HYALIN is more than a product that was created to tide over a war-born emergency: it has certain definite advantages that entitle it to a permanent place in cosmetic formulations.

HYALIN is very stable in odor as well as in color. Its straw-like odor will not eventually develop a sheepy, goaty character. Its color will not ultimately darken, to cause discoloration in the products in which it is used.

Due to its powerful emulsifying properties, **HYALIN** can be used in smaller percentages than Lanolin in new formulations. It is particularly suitable for lipstick as it is in itself a good vehicle for bromoacid and pigments.

HYALIN is well worth examining, not only for its immediate use, but equally so for its future use. Working samples will gladly be sent upon request.

VAN DYK & COMPANY
INCORPORATED 1904

Manufacturers of Perfumery and Cosmetic Raw Materials since 1901.
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desiderata

Comment on interesting new chemical developments and their application to cosmetics and toiletries

by MAISON G. DENAVARRE

M. G. DeNavarre at work in his laboratory

CHICAGO CHEMICAL TRADE SHOW

I'll probably get it in the neck for saying this, but I doubt that there is much real or intangible value to such shows as the Chemical Exposition held last November at the Chicago Colliseum. No company can have all the samples of their own materials or finished products containing these materials in the quantities required. Everyone is under pressure. Sales representatives in booths are grossly overworked. Established customers come in while you are talking to a prospect who is unwilling to tell you much about what he wants. You are forced to cut off before you should . . . and so on.

The show did not impress me. There was a larger attendance than at the New York show. I saw but a few materials or companies displaying them that applied to cosmetics. Yet some of the companies displaying have a raft of cosmetic things which weren't at the show. I've seen them at their plants.

Seems like trade press advertising still gets the biggest story to the biggest number of people. I have not been alone in depending on the trade press for my equipment and materials information, and I know that complete reading of a sufficient number of journals each month keeps me properly posted.

COMMERCIAL SORBITOL SYRUP

Several years ago when commercial sorbitol syrup became a production reality, I among others wrote glowing praise of it as an ideal humectant that would be available *in spite of war*. There were a number of reasons to believe the availability of sorbitol syrup over glycerine. One obvious one was that sorbitol did not enter into the composition of explosives. Little did any of us know that sorbitol was destined to be more scarce than glycerine itself, for sorbitol and its isomer mannitol found manifold applications in the victory effort, one of which was the large scale production of vitamin C.

All this is now past. Besides, sorbitol syrup manufacture is greatly expanded. It is now off allocation and may be freely bought by anyone.

What I said about it a couple of years ago still stands. It is not a replacement for anything. It is a product that can stand on its own remarkable merits. It has a slower moisture pick-up and loss. It gives "plus" properties to any cosmetic formulation. Like all materials, it has an optimum and minimum percentage for each use. In vanishing and hand creams, it may be used up to 10 per cent, but lower amounts not exceeding 5 per cent are advisable for lotions, for example. It blends well with propylene glycol. Even in greasy night creams, commercial sorbitol syrup produces an interesting cosmetic feel. So, look to sorbitol syrup again for plus or unusual cosmetic effects.

RESTENCILING INK

A new ink of sandy color is available to obliterate markings on all kinds of cartons so they can be restenciled with your own markings. The value of this new aid is obvious to anyone who has been using cartons with other manufacturers names on them. It is quick, easy and does a clean job for you.

Another series of wetting agents has become available in large quantities. The materials are reputed to be useful for bubble bath, shampoo, dentifrice and other purposes. They are available either as dry powders or as amber colored liquids. Price is very reasonable.

CREAM SHAMPOO

An interesting base for cream shampoo is a colloidal aluminum magnesium silicate gel which many people have been sampled with. Mix equal parts of gel and wetting agent and you can get a nice solid cream. Foams well, stays opalescent over wide temperature ranges, too. Better look into it.

PERMANENT WAVE OIL

Another permanent wave oil has just popped out on the market. It is a clear straw colored liquid that is added directly to the solution. Opalescent or milky solutions may be produced. The material leaves the hair feeling and looking nicer after the wave than when none of the oil is used. Low in price, easy to use, it is no longer necessary to make permanent wave solutions without such materials, since all you have to do is to pour it in and stir.

POWDER MILLING

If one can believe the pictures and what one is told, there is a strong new trend that will break loose soon that will change the industry from powder milling as by a micropulverizer, to a new method of air milling. The equipment is to be available to everyone. The sketch I saw looks as if the unit won't be difficult to operate either. Particle size of maximum

2 to 5 microns will be as easy to achieve as falling off a log. The inventors claim also to be able to *coat* one kind of particle with another kind of particle. Can't you just see the delicious colors possible by this technic compared to ordinary pulverizing?

PROPYLENE GLYCOL FLAVORS

Because of their high solvent properties and water miscibility, glycols were used in flavors a long time ago. Now, however, only propylene glycol is allowed in flavors. I've used it for a number of years following up a hobby. This year I started a series of experiments using propylene glycol as a natural flavor solvent. The results of these experiments will be published in the flavor section, from time to time. Every flavor man will be interested in them. The *true* concord grape bouquet can at last be put into flavor. Grape juice doesn't give it. But a true grape extraction with propylene glycol will, as will be told in these experiments.

Questions and Answers

526. CREAM SHAMPOO

Q: *I would appreciate your suggesting a formula and procedure in compounding one of the new type of milky shampoo. Enclosed you will find stamps to cover mailing.*

W. L.—ARIZONA

A: The creamy shampoo appears in several forms. Most are compounded from specialties. All contain an active wetting agent, starting from about 5 per cent, going on up to about 35 per cent, depending upon the viscosity. Under separate cover, we have given you the name of one supplier of a specialty used in compounding cream shampoo. The important problem apparently is to get a solution or suspension of wetting agent in sufficient concentration together with materials capable of being emulsified, such as the higher alcohols or neutral esters, such as spermaceti. Only enough of the latter is used to make the product opaque. The important consideration is to keep the product milky in temperatures up to 100 deg. F. Any specialties on the market become translucent at this temperature.

527. LIQUID ANTIPERSPIRANT

Q: *We would like to receive a formula for a liquid antiperspirant and deodorant, something that would be almost clear.*

C. Z. M.—WISCONSIN

A: A liquid antiperspirant and deodorant that is clear can be made from 15 to 25 parts of aluminum sulfate in water. Allow the solution to stand for about a week and filter bright. Such a preparation will tenderize fabric and a buffer is necessary. The only buffers we know of are all patented, although you might add one half to one per cent of borax to this solution and effect a certain degree of protection.

528. CREAMY SHAMPOO

Q: *Can you give me a formula for a thick, creamy shampoo? In my trials, the soap gets slimy or separates. I would like to make it with soap granules.*

L. V. I.—TENNESSEE

A: The creamy shampoos contain very little soap since it tends to gel. Most of them use a water soluble wetting agent. The name of one creamy product that is sold in bulk is sent to you under separate cover. Because of the scarcity of wetting agents that will work well with soap, it is doubtful if you can make a cream shampoo of the type you have in mind by using soap granules.

529. TEST ON TOTAL FATTY ACIDS

Q: *We manufacture shampoos that are used by a number of large concerns who bottle it under their own label. In making each batch of shampoo, the variation in the formula is adjusted after testing. Since we are now making shampoo in larger quantities, we want to cut the time for chemical analysis. Is there any way of doing this?*

C. M. P.—PENNSYLVANIA

A: It should not take so long to make a test on total fatty acids. The fatty acids may be liberated with hydrochloric acid, extracted with several portions of chloroform or ether, thoroughly washed and quickly titrated, using standard alkali. Other methods are also available. Thus, by using a Babcock bottle, heating a measured sample beyond the melting point of the fatty acids, liberating the fatty acids with hydrochloric acid and then bringing the volume up into the neck of the bottle as is done in determining the per cent of butter fat in milk or cream. The bottle is centrifuged to effect separation of the water from the fats, the volume noted and by using a factor that you will have to determine, the amount of fatty acids can be quickly calculated. Other methods will appear in "Production Control and Analysis of Cosmetics."

530. HAIR FIXATIVE PRESERVATIVE

Q: *What preservative is required for a hair fixative consisting of a solution of tragacanth and karaya gum. We have used formaldehyde without success. When we add a citrus perfume to this product, it becomes opaque. How can this be avoided? How can castor oil be added to mineral oil and get a clear solution.*

M. L.—BRAZIL

A: If you have used 0.3 to 0.4 per cent of the commercial 40 per cent solution of formaldehyde, you should have no difficulty. You may also use 0.15 per cent of methyl para-hydroxy benzoate which is dissolved in your water before the gums are added. Suppliers of this material and of a freely water soluble para-hydroxy benzoate are sent to you under separate cover. The reason your perfume clouds may be due to an excess of perfume or to the low water solubility of the perfume. As a result, you get an emulsion. It is suggested you buy perfumes of greater water solubility or to use a solubilizer for your perfume. The tricks of dissolving castor oil and mineral are mostly patented. Yet by the use of a coupling agent, such as oleyl alcohol in suitable amounts of castor oil can be dissolved in mineral oil.

Parmantheme

A truly remarkable synthetic version of the natural Parma-Violet note!

This Chuit, Naef specialty embraces all the most desirable characteristics of the ideal Violet basic note. It is non-irritating—*contains no methyl heptine carbonate*—very fresh and tremendously powerful.

PARMANTHEME can be used in any type toilet preparation, being particularly effective in lipsticks, creams and perfume extracts.

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Foil—the Great Stabilizer

Broad and varied uses of foil expanded to include cosmetic, soap and flavor industries . . . Physical characteristics . . . Effect on post-war packaging

by DUANE DAVIS

Manager of Drug and Chemical Industries, Reynolds Metals Co.

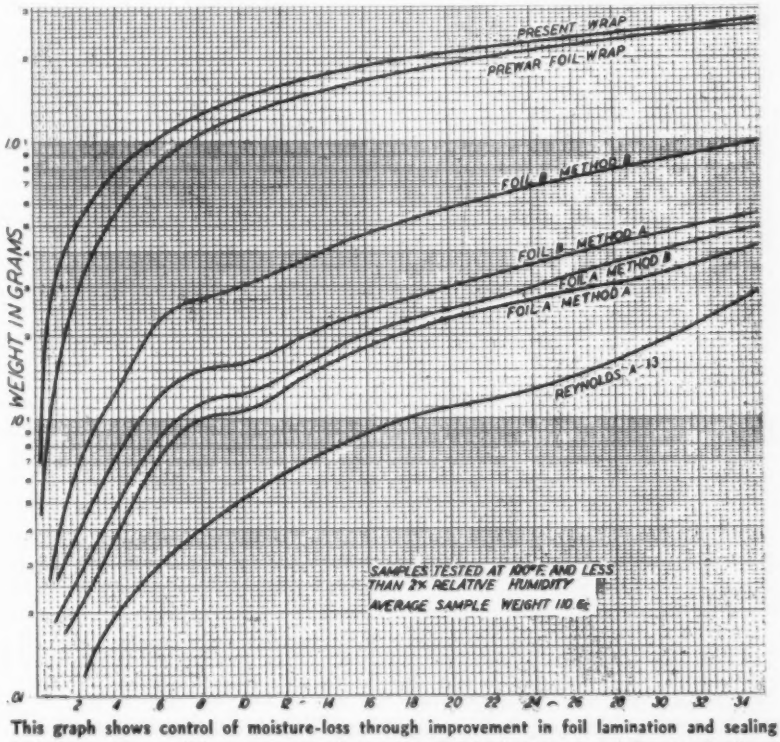
OR How to Lengthen Shelf-Life in One Easy Lesson," might well be added as a subtitle to any article dealing with the packaging possibilities of aluminum foil. To industries involved in the production and distribution of such highly perishable merchandise as cosmetics, soaps and flavors, metal foil offers the ultimate protective packaging material.

FUNCTIONAL CHARACTERISTICS

Before the war the eye appeal of foil was well established, but not too much emphasis had been placed on its functional characteristics. Oddly enough, it took a war to bring out the latent potentialities of foil as the best flexible protective packaging material known. It is a far cry from the luxury of cosmetics and perfume to the South Pacific theater of war, for instance, but that theater is going to have revolutionary effects on the packaging and marketing of such commodities as soap, perfumes and flavors.

For three long, hard years, in one of the toughest laboratories possible to conceive, the laboratory of War, foil has been tested and found indispensable where maximum protection was required.

True, foil was laminated successfully before the war to a number of other materials and more and more products were appearing on store shelves, glitteringly packaged in foil. Then, along came the war, and foil went off to fight. Wherever our men went, supplies had to be sent and those supplies had to reach those men in perfect condition. It wasn't a matter of just a few related items that foil was called upon to protect in transit and in storage areas. Laminated foil has been used to protect batteries, machine gun belts . . . everything from Bibles to bullets. Sulfa tablets had to be packaged so that wounded men could get at them easily, and they had to be intact in their potency. Surgical instruments had to be protected from corrosion. Drugs had to be effective, food fresh, machine parts in working order, even after they had traveled half way around the world under the most



This graph shows control of moisture-loss through improvement in foil lamination and sealing techniques. Pre-war foil wrap is spot glue sealed. Foil laminations A and B were developed for use by armed forces and will be applicable to civilian use on standard wrapping equipment. Reynolds' A-13 material, a heavy sheet developed for packaging drugs and replacement parts for the armed forces, will be suitable for post-war bulk shipment of some hygroscopic drugs. Method A is conventional end fold. Method B is experimental closure for irregular soap bars.

severe shipping and climatic conditions. It is interesting to note that with the recent shift of the theater of war from the African-European to the South Pacific, even greater protection in packaging supplies was needed. As a result, the uses of foil, already broad, have been expanded on critical items, proving again that metal gives the highest protection.

What are these properties that make laminated aluminum foil particularly the answer to the packager's prayer? From a practical angle, it is possible to roll aluminum to greater yields per pound in ratio to price per pound, it has greater tensile strength than lead or tin and the characteristics of retaining lustre. The inherent physical and chemical properties of this light, flexible material make it adaptable to widely diversified industries. It is impervious to light, moisture-vapor, water, insect infestation, odor absorption or transmission. Its gleaming surface can be printed in any manner in which paper is now printed. The variations of laminations are endless and it is interesting to note the mutual increase in usefulness and strength achieved by laminating foil with plastics, cellophane, pliofilm and vinylite.

The inherent properties of foil, plus the new techniques of laminating and sealing that have been developed to meet rigid demands of the armed forces are going to revolutionize packaging, production and shipping in the post-war economy.

From the glamour angle, which is a definite concern of these particular industries, there is no other single material that is so beautiful and at the same time useful. Aluminum foil has a physical appearance all its own. It carries its own spotlight, as it were, for the eye is naturally attracted to a bright surface. Therefore, wherever a foil-wrapped package appears on a shelf or in a showcase, there will the eye of the buyer be drawn. As has been said, too, it is possible to print foil in all the ways that paper can be printed. It can be colored to meet any demands, embossing in all its forms lends added beauty to its shining surface. Therefore, laminated foil makes a self-sufficient material. Used in place of other types of materials it will have a definite effect on the cost of production and shipping. Because it is the ultimate in protective packaging, and beautiful to look at as well, closure units can be reduced to the least common denominator while at the same time giving it the highest rate of protective efficiency and beauty. In other words, the shelf-life can be beautiful as well as stable if a commodity is wrapped in aluminum foil.

INDUSTRIES SERVED

Of especial interest to the cosmetic, soap and flavor industries is the fact that this material is impervious to light, odor transmission, and moisture-vapor. These physical characteristics are equally present in foil as opposed to transparent wrapping materials which may be strong in one but weaker in other important characteristics. The fact that light cannot penetrate foil, even infra-red rays, assures the preservation of precious perfumes whose aroma is affected by the action of light. Neither can volatile oils escape through the metal barrier, making it possible to use less and still be assured of high aroma fidelity.

The Reynolds Metals Company, the largest roller of foil in the world, has just completed a series of preliminary tests on the packaging of soap that bears out these statements. During this wartime period, they have developed and perfected new heat-sealing materials that combine the three universally used packaging materials, i.e., metal, paper and wax, with variations to meet specific requirements. The foil (which is the metal) acts as a temperature stabilizer and has smooth, non-absorbing heat-conducting qualities. The paper provides a cushioning effect, protects the material against edge break and creates a dispersion medium for wax. The wax, in turn, eliminates the problem of curl, thus producing conformity, the outstanding feature of laminated foil. The resulting thermoplastic laminations can be heat-sealed on standard equipment with few minor changes.

In the soap-wrapping experiments, it was determined that this new method of handling foil and sealing provides about five times more protection than even the foil wrap available before the war and a higher percentage than the paper wrap now in use. This automatically adds greatly to the shelf-life of this type of product, and other merchandise having similar protective needs would profit.

War Paint

Face paint may have annoyed them during peacetime, but today's fighting soldier is grateful to the Quartermaster Corps for supplying it, for unlike milady's cosmetics, Army face paint is provided for camouflage purposes. More than 4,000,000 containers were purchased during a recent three-month period.

Manufactured in stick form to fit a round metal tube 1 in. in diameter and 3 in. long, each unit of camouflage paint is supplied in two colors in one of three combinations, loam with green, white or sand. Color choice depends upon the type of terrain. Free from excessive greasiness, the paint is still smooth enough for easy application, and contains an insect repellent to offer the maximum practicable protection from mosquitoes, flies and similar injurious insects.

The paint gives a dull, non-glossy film to the skin, thereby offering added concealment to the soldier, whose unpainted skin would otherwise reflect light. Areas of exposed skin are thus blended into surrounding terrain. Although readily removable with soap and water, camouflage paints are not washed off by rain or perspiration. In addition, they are water repellent and may be used in temperatures ranging from 20 to 150 degrees Fahrenheit.

Individual sticks are packed 100 to a box which also includes 10 instruction sheets. Photographs on the sheet show the various steps in applying skin paint with an irregular pattern of two colors, and users are cautioned to cover backs of hands, ears and necks as well as faces.

Nigerian Palm-Oil

Nigeria is by far the largest producer of palm-oil among the British West African territories. In 1943 it had a production of 324,000 tons of palm-kernel gradings and a palm-oil output of 139,000 tons. Before the war this colony exported more than four times as much palm-oil and palm-kernels as the rest of the territory combined.

The palm-oil industry is largely native. There are no large expenditures, and few plantations are owned or leased by Europeans.

Survey of American Eucalyptus Oils

Commercial production of eucalyptus oils in this hemisphere, a result of war . . . This article deals with quantity and quality from various sources

by DR. ERNEST GUENTHER

Chief Research Chemist, Fritzsche Brothers, Inc., New York, N. Y.

PREVIOUS to the outbreak of World War II, the world's demand for all kinds of eucalyptus oils used to be supplied almost entirely by Australia. With a total yearly production of approximately one million pounds of oil, Australia then held practically a monopoly in this respect, Spain being second with about two hundred thousand pounds of eucalyptus globulus oil.

The outbreak of the war, the ensuing shipping difficulties, the lack of labor in the interior of Australia and the greatly increased demand for medicinal and technical eucalyptus oils on the part of the British armed forces changed the picture so fundamentally that the Western Hemisphere ran very short of these important oils and had to develop its own independent sources of supply.

While in former years Australia's competition practically prevented any other country from entering this field, considerable progress has lately been made in various parts of South, Central and even North America. The much higher prices of eucalyptus oils prevailing since 1939 facilitate the establishment of new sources in the Western Hemisphere.

The following paper, based upon a personal survey by the author, will describe the present status of this industry in the Americas.

OIL OF EUCALYPTUS GLOBULUS AND ALLIED MEDICINAL SPECIES

This important medicinal oil is today being experimented with and actually produced in several countries, viz., Argentina, Uruguay, Brazil, Colombia, Guatemala, Mexico and the United States (California).

I. ARGENTINA AND URUGUAY

Substantial quantities are being sold on the domestic market and exported to the United States.

A sample of eucalyptus oil from Uruguay, examined in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

Specific Gravity at 25° C.	0.911
Optical Rotation	+6°0'
Refractive Index at 20° C.	1.4622
Cineol Content	72.3%
Solubility at 25° C.	Soluble in 5.0 vol. and more of 70% alcohol.

The properties of this oil met the specifications of the U. S. Pharmacopoeia Twelfth Revision.

II. BRAZIL

The producing regions are located in various parts of the State of São Paulo, especially along the Paulista Railway System "Companhia Paulista de Estrada de Ferro." Thanks to the pioneer work of Dr. Navarro de Andrade, former director of that great railway, many eucalyptus species, among them *eucalyptus globulus*, have been introduced and planted on a large scale for fuel and general reforestation purposes. Dr. de Andrade in his later years became one of the world's leading authorities on eucalyptus. A former hobby thus developed into a magnificent agricultural enterprise as immortalized by the great eucalyptus garden and museum in Rio Claro.

Of all the eucalyptus species, however, *eucalyptus globulus* is one of the least suited for fire wood, as the wood does not easily split. *Eucalyptus globulus* has, therefore, so far been comparatively little planted in Saõ Paulo. Furthermore, the young trees are very sensitive to transplanting for which reason *eucalyptus globulus* is best propagated like *eucalyptus citriodora* (see below). This refers also to the cutting of the leaf material.

Because of the present strong local demand for medicinal eucalyptus oils, the plantations of *eucalyptus globulus* are now being extended, especially in the vicinity of Limeira (State of Saõ Paulo), with a production of five to six tons of oil in sight by February to March, 1945. The yield of oil from the leaves of the still young trees is about 3 per cent.

III. COLOMBIA

Originally introduced about one hundred years ago from Australia, the first real plantations of *eucalyptus globulus* were undertaken only about twenty years ago, not very far from Bogotá, Colombia's capital, on the fertile, high plateau and in a temperate, rather cool climate chosen by the early conquistadores as best suited for settlement. Since then the tree has become semiwild and wild and can now be found in numerous places of that plateau. Many settlers plant *eucalyptus globulus* mainly for the wood which serves very well for building and construction work as the trees grow quickly and can be cut for the first time three years after planting. However, most trees are left to grow for about ten years before cutting. The best procedure is, perhaps, to fell the trees for the first time five years after planting when they have not yet grown too thick as this facilitates transport. After cutting, the tree grows again spontaneously and can be cut a second time after seven years, and a third and last time after ten years. The leaf material used for distillation

originates partly from these felled trees and partly from wild and semi-wild live trees scattered over wide regions, in which case the Indians have to climb the trees in order to trim them with machetes. The Indians then transport and sell the leaves in sacks of about 25 kilos content to the distilleries.

There exist a few field distilleries, for instance near La Tribuna, 48 kilometers from Bogotá on the way to Villeta. One producer, for example, operates 5 square metal stills holding 2 cubic meters each, and 1 square still holding 5 cubic meters. One thousand five hundred pounds of fresh (green) leaves are charged into each of the smaller stills above a grid; the water beneath the grid is brought to a boil by direct fire and the steam blown through the leaf material. Distillation lasts about three hours per batch, but the yield is only about 0.9 per cent which can easily be explained by the rather ineffective method of distilling. The method of water *and* steam distillation easily causes wetting of the plant charge with a resulting insufficient yield of oil. Another producer near La Tribuna distills one charge for almost a day and from fresh (green) leaves obtains a yield varying from 1.5 to 2 per cent.

Two samples of crude *eucalyptus globulus* oil distilled in that section and analyzed by Fritzsche Brothers, Inc., New York, had these properties:

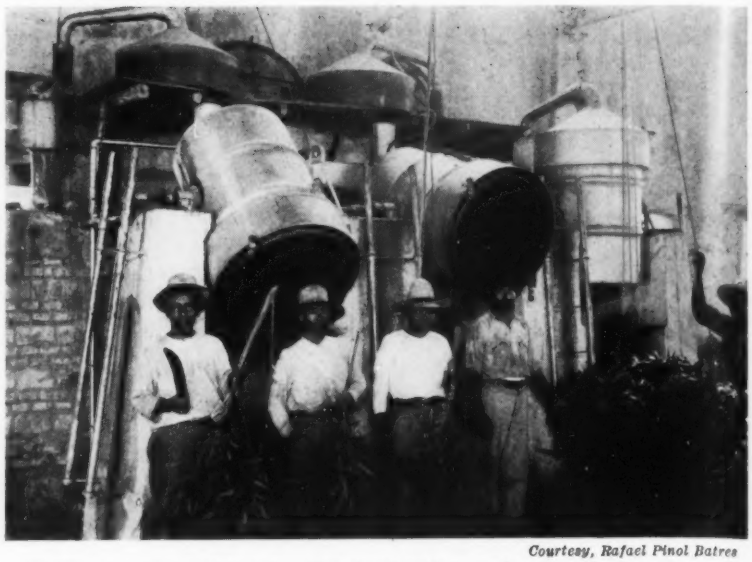
	I	II
Specific Gravity at 25° C.	0.910	0.901
Optical Rotation	+9°50'	+12°0'
Refractive Index at 20° C.	1.4647	1.4633
Cineol Content	57.9%	56.3%
Solubility at 25° C.	Soluble in 1.0 vol. and more of 80% alcohol. Hazy in 10 vol. of 70% alcohol.	Opalescent in 1.5 to 2.0 vol. and more of 80% alcohol.
Test for Heavy Metals	Negative	Positive (traces).

Two samples of rectified *eucalyptus globulus* oil of identical origin had the following properties:

	I	II
Specific Gravity at 25° C.	0.907	0.900
Optical Rotation	+9°37'	+10°47'
Refractive Index at 20° C.	1.4644	1.4622
Cineol Content	61.2%	61.2%
Solubility at 25° C.	Cloudy in 10 vol. of 70% alcohol. Scluble in 1.0 vol. and more of 80% alcohol.	Turbid in 10 vol. of 70% alcohol.
Test for Heavy Metals	Negative	Negative

None of the four oils described above met the specifications of the U. S. Pharmacopoeia Twelfth Revision.

Total production of eucalyptus oil in Colombia is still very limited but could be increased to several tons per month if sufficiently high prices and demand on the part of the United States should warrant it.



Courtesy, Rafael Pinol Batres

Distilling apparatus used in series. One closed ready to work; others showing water seal

IV. GUATEMALA

While *eucalyptus globulus* has been known in this Central American republic for some years, a hacienda owner near Guatemala City started in 1910 large plantings of various eucalyptus species, especially *eucalyptus citriodora.* The soil there consists of volcanic ash and sand, the altitude is about 5,000 feet above sea level. The temperature varies from +6°C. to +28°C. with fairly heavy rainfalls from May to October, and a dry period from November to April. *Eucalyptus globulus* suffers from the disadvantage of being overturned by the strong winds hitting that region from November to February. It is, therefore, planned to extend the now small acreage of *eucalyptus Smithii* and *eucalyptus Australiana,* which give medicinal eucalyptus oils very similar to *eucalyptus globulus.* The following method of planting, harvesting and distilling applies to all Guatemala eucalyptus species.

The seed capsules are cut when ripe and about ready to open, then dried in the sun for a day or two until the seeds fall out of the capsules. For best results the seed should be sown as fresh as possible, although it will retain its germinating power for a year after cutting. Because of the length and fragility of their root system, the plants are sown in pots and placed into the fields when the plant has reached a height of about six inches. The planting is done either quincuncially or in rows (fence form). With quincuncial arrangement the square is 7 meters wide, but if planted in fence form the distance between the plants should be 2 meters and the distance between the rows 7 meters in order to give the roots sufficient room for development. Corn, beans, or other leguminous plants sown between the rows keep the land free of weeds and provide green manure.

When the trees are three to four years old the tops are lopped off in order to force the branches to spread out. This is repeated until the trees are seven to eight years old when the trunk has grown to fairly large size and has developed numerous low

branches which are easy to cut. Trees thirty years old show no sign of exhaustion.

The leaves of a well developed tree may be cut twice a year. The branches are lopped off by one straight cut of the machete, then piled between the trees. Two branches are left on each tree to keep it alive. A cart passes between the rows, picking up the branches as soon as they are cut and hauling them to the distillery. There the leaves and terminal branchlets (not more than one-half inch in diameter) are cut from the branches with machetes. Thus, the distillation material consists only of leaves and terminal branchlets which accounts for the rather high yield of oil obtained in Guatemala. One hundred pounds of freshly cut material will dry in the shade to about eighty pounds in two days and will, in each case, produce the same amount of oil.

Three to four-year-old trees, as counted from the time they are placed into the field, produce yearly eight to ten pounds of leaf material, while fully grown (ten to twelve-year-old) trees if well cultivated and properly cut to form bushes yield on the average one hundred pounds of leaves per year. When planted in rows, one acre contains about 350 trees. An acre will thus produce annually 3,500 pounds of leaf material. After the tree has reached full maturity at ten to twelve years, the yield of leaves will no longer increase.

Distillation is carried out in the usual way, the steam pressure in the generator varying from thirty to forty pounds. Distillation of one batch lasts about 1½ hours, but must be modified according to the different species. The apparatus should be cleaned frequently in order to prevent rusting and also in order to remove layers of deposit which easily form inside of the still and condenser. In fact, because of these deposits, and in order to avoid contamination, each species of eucalyptus should be distilled in separate apparatus.

Leaves that are too young or too old do not yield the same amount of oil, the percentage decreasing considerably. Flowers and seeds change the composition of the oil and, therefore, should be eliminated from the distillation material. Whenever the trees are allowed to go into seed, the yield of leaves decreases. During the rainy season the trees develop more leaf material, but the yield of oil is lower and the composition of the oil somewhat different.

Courtesy, Rafael Pinol Batres

Plants between two and three months old are ready for transplanting

On an average *eucalyptus Smithii* yields about 1.75 per cent of oil from fresh leaf material.

A sample of Guatemala *eucalyptus Smithii* oil examined in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

Specific Gravity at 25° C.	0.916
Optical Rotation	—4°8'
Refractive Index at 20° C.	1.4618
Cineol Content	78.4%
Solubility at 25° C.	Soluble in 2.0 to 2.5 vol. and more of 70% alcohol.
Test for Heavy Metals	Negative

The properties of this oil met the specifications of the U. S. Pharmacopoeia, Twelfth Revision.

V. MEXICO

There exists at present a eucalyptus distillery in Atzcapotzalco, a suburb of Mexico City.

Eucalyptus trees (*eucalyptus globulus* and *eucalyptus virginifolia*) introduced probably by the Emperor Maximilian about eighty years ago, if not by the early Spanish settlers, grow wild and semiwild in the great valley of Mexico City, in a radius of 12 to 30 kilometers from the capital as center. Principal growing centers are near Tlanepantla, 30 kilometers from Mexico City, and around the Hacienda Echegaray. The trees there have obtained great height and must be climbed by the Indians in order to cut the branches, together with the adhering leaves. The material is then trucked to the distillery and distilled while fresh (green) for about three hours, the yield of oil being less than 1 per cent. Production in this distillery approximates 600 kilos monthly.

The long hauling of the distillation material to the distillery increases the cost price of the oil unnecessarily, for which reason the establishment of movable field stills is planned in the State of Chalisco where eucalyptus grows abundantly.

In the course of the present distillation in Atzcapotzalco, the oil is fractionated into three fractions:

1. The forerun (about 25 per cent of the total oil) is sold to the local candy makers.
2. The main run (about 65 per cent of the total oil) is employed by local pharmaceutical manufacturers. It contains about 90 per cent cineol.
3. The last run (about 10 per cent of the total oil) is also sold to candy makers.

A sample of crude (not fractionated) Mexican eucalyptus oil, examined in the New York laboratories of Fritzsche Brothers, Inc., had these properties:

Specific Gravity at 25° C.	0.912
Optical Rotation	+6°45'
Refractive Index at 20° C.	1.4683
Cineol Content	53.5%
Solubility at 25° C.	Cloudy in 10 vol. of 70% alcohol.
Test for Heavy Metals	Positive

Because of its poor properties this oil did not meet the specifications of the U. S. Pharmacopoeia XII.

VI. UNITED STATES (CALIFORNIA)

About 90 per cent of all the eucalyptus trees growing now in the state of California consist of *eucalyptus globulus*, large numbers of which were planted years ago in various areas for lumber purposes and especially as a source of poles. However, because of irregular shrinking when dried in kilns, *eucalyptus globulus* is not well suited for this purpose.

About forty-five years ago, around 30,000 acres of *eucalyptus globulus* were planted in the Oceano area of Central California, and another section by the Santa Fe railroad near Oceanside and Miramar on their hillsides and arroyo lands in San Diego County. However, the *e. globulus* trees in that county are mixed with other species, such as *rubra* and *sideroxylon*, and those lands have since been divided up into small farms of about ten acres and sold as home sites. Another development is around Fontana, where a large agricultural enterprise planted, during the past thirty years, approximately 90,000 eucalyptus trees as wind breaks for protecting the light top soil. This formerly large ranch has lately been sold off in the form of subdivisions so that today there is no concrete acreage of eucalyptus left. In order to distill eucalyptus oil in that section, a producer would have to deal with a large number of individual owners to secure cuttings from the trees. Another section, consisting of about 200 acres, is located north of Woodland near the town of Blacks.

There are miles and miles of *eucalyptus globulus* wind breaks along the roadsides in San Diego County, Orange County, Los Angeles County, Ventura County, San Bernardino County, Santa Barbara County, Kings County, San Luis Obispo County, Sacramento County, Marin County and San Joaquin County. Since all trees are located on private property, one would have to deal with many individuals in order to secure the leaf material necessary for distillation.

Efforts to produce eucalyptus oils have been made in California on many occasions during the past, but have not succeeded on a really large scale. Yet, many people now consider the idea seriously and some concrete results may occur in the future. The great handicap at present consists in the fact that the trees have grown to great heights, which impedes the cutting and collecting of the leaf material. Furthermore, labor in California is now scarce and at a premium because of the newly established war industries. It remains more than doubtful that after the end of World War II and after the re-establishment of normal trade, California can ever compete with Australia where natural conditions are so favorable for the production of large quantities of all kinds of eucalyptus oils.

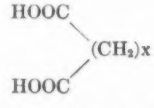
(Editor's Note: This article will be continued in an early issue.)

Odor Effected by Chemical Structure

by DR. ARNOLD BELLER
Centflor Manufacturing Company

ALTHOUGH the organic chemist in general is quite familiar with the influence of the chemical constitution on the color of chemicals and this knowledge of the chromophoric groups helped develop the enormous industry of dyes, he pays very little attention to the relation between constitution and odor. Many useful synthetics have already been developed along this line but the war with all its vital problems of production left very little time and opportunity to the research chemist interested in aromatics.

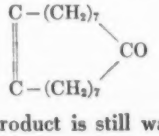
As an example for the relation of odor and constitution we will use the various synthetics developed through the ring closure of higher aliphatic dicarboxylic acid of the structure.



L. Rizicka isolated the odiferous constituent of natural musk and found its chemical constitution as being methyl-cylco pentadecanone (Muscone). Originally the ketone group was held responsible for the musky odor of this isolate but through investigation made by chemists like Carothers, Hill and others, it was proven that most of the fifteen membered rings have similar odors even if they were not ketones but esters, lactones or anhydrides. Various products have been synthesized in this group of chemicals.

The main source for high membered aliphatic acids are some vegetable oils such as rape seed oil, etc., from which they are isolated by saponification and oxidation. The problem is the cyclization of the di-carboxylic acid, which originally was made by dry distillation of its metal salts, but the yields were very poor. The method of Ziegler gives good yields but the Lithium salts of the corresponding nitriles require tremendous dilution. The best method is the molecular distillation of the linear polymerized intermediates. It is used economically in production of polycyclo-compounds.

The type of the odor of the polycyclo-synthetics changes rapidly with the increase of carbon atoms. Seventeen to eighteen carbons are required for the odor of civet, whose odiferous constituent was also found by L. Rizicka, who called it "Civetone."



This product is still waiting to be synthesized. A very interesting source for the various di-carboxylic acids was found by the author in Mexican saffron and in bixa orellana, the natural dyes used in artificial butter. From the glucosides in these plants we get the carotenoides crocetin and bixin. Their saponification yields unsaturated di-carboxylic acids with sixteen and nineteen carbon atoms which can be hydrogenated and the ring closed.

(Editor's Note: This article will be continued in an early issue.)

Cosmetic Trends in the Middle West

Study of holiday buying shows cosmetic and packaging needs for the year ahead . . . Toiletries for men and cosmetics for teen-agers show upward curve

by JEAN MOWAT

TRENDS set by the 1944 holiday buying have set definite needs for the cosmetic and packaging industry to consider now as a prelude to Christmas 1945-46.

Heading the list is that of packaging. The matter of boxing had much attention because there were so many kits offered which were hardly unpacked before they were sold. An upward curve in the sale of crystal bottles, as gifts and as collector's items, was also noted. Stores lacked containers to use as holiday atmosphere and to add gift appeal. Buyers think that this is a matter for the industry to consider, and use packaging engineers to make their sales next season definitely appealing. Better fabrics in kits for creams and manicure outfits and in "treatment" cases are asked for.

Plastic caps are not standing up as well as the trade wants and there are complaints on this. Bottles so shaped that they will not slip when the hands are moist are definitely on the must list.

Buyers suggest that national advertising carry with it more of the know-how to use the preparation than merely the fact that it is new and smart. They will also ask for more educational material and aid to make their own salesgirls better equipped to handle the new customers which are expected for the first half of '45.

A sponge as a part of cake make-up outfits was suggested as important and desirable for successful application; this could be an insert so skillfully done as to add smartness.

PERFUMES SCENT WITH LOVE

Probably this is one year when reports of buyers to makers of colognes and perfumes will indicate one of the largest seasons on record. There are two divisions—the sophisticated type which the teen-agers are demanding in both cologne and perfume; and the popular spice fragrance, and the newer woodsy scent, which the woman who is careering demand about equally. This latter scent is growing in popularity throughout all sections of the country—that is as far as Duluth and the Twin Cities east to Detroit, and through Kansas City and St. Louis. Chicago has used full pages, and other cities half to quarter pages, but all copy was institutional in character.

Perfumers whose goods carry the U.S.A. mark will be faced with increasing competition during the next year. Already women are flocking into the perfume sections of leading stores with gifts of concentrated essences (much heavier than those offered in this country) and asking to have them cut. These are gifts from the men abroad, and are truly of the finest types. The result of the cutting will probably mean a good many perfumes will be offered from makers of non-branded goods.

Colognes as a single unit of sale are being given a push by being combined with talcums and soaps. Since buyers have seen the wads of folding money which new customers are tossing about, as $25 for an ounce of this or that, and $15 for a combined unit of "youth," and using this combination with as great ease and frequency as soap, salespeople are being educated to the importance of adding sales. The freshness of a cologne, whether liquid or creme, naturally calls for soap, and future programs of leading stores will make this a double sale—although soap may be difficult to obtain after the first quarter of 1945.

Separation of departments makes it easier to handle customers

COSMETICS FOR MEN

Cosmetics for men have been given full page advertisements by middle west stores. Younker's of Des Moines

used a full page to present leading brands, and made it a man's ad for women buyers. On the other hand, the Hub in Chicago has placed the men's division in the men's section, and finds that men shop there. Other stores have made a separation of the departments to make it easier for the salespeople to quickly handle customers. Chas. A. Stevens & Co., a women's specialty store, has a complete men's section.

Since men are becoming educated to the importance of deodorants they are also finding that some of their old fashioned notions of a "masculine" odor is anything but effective. They have used creams for shaving, and astringents for years, long before their wives, sisters and mothers had more than discovered that an egg-white was a good "tender" to use on skins. Unlike women they didn't mention the use of non-fragrant talcs, but could raise considerable disturbance if anyone touched these items. The trend was there, but not much appreciated before the war.

Today mail order catalogs carry a page of illustrated items in cosmetics for men, and stress the particular types that have found favor with users. There is a trend toward putting cosmetic sections in men's departments to make it easier for them to make selections. St. Paul stores have used full pages to stress the smartness of these gifts for men.

ENSEMBLE SELLING TRENDS

Holiday selling has stressed the fact that few women know how to buy cosmetics intelligently. They buy lipstick and hope their nail polish will match. Since a leading maker of nail polish has also come out with a lipstick to match, the sales in all stores of this bread-basket section have shown a sharp upward curve. But buyers are not satisfied. They consider this idea good—but not enough. Here's what a leading store reports:

"The very fact that women are using more and more nail polish than ever before, with a quick drying ingredient, tends to make the nails brittle, to dry out the cuticle. Add to this the fact that more women are doing their own work than ever before and you'll see why there are complaints of the polish chipping.

"A nail polish is only the beginning of a sale. I expect every girl in my section to sell with nail polish (1) cuticle cream, (2) hand lotion, (3) hand cream, to be used on elbows and knees as well, and a small purse container of the lotion to be used whenever she washes her hands. I consider the polish remover as part of the polish sale. It can be made as easily as the one sale, and if added to this is the lipstick to go with the polish, and the powder to go with it, then we have what I call a good check, if added to this are cleansing and tissue creams.

"That is the direction this department is taking as its 1945 trend, for we are going to have our share of the folding money, and educate our customers on how to make us produce new hand and face beauty for them," was the statement of this Store's buyer.

COLLECTING LIPSTICKS

Teen-agers are all agog over the great variety, color and types of lipsticks. Contents, case and packaging are part of the collector's items these youngsters are gathering. Since there has been too much complaint about rouge, and high school girls come in looking like a fire truck, there is now a complete reversal. Today, only that group that has been out of its teens for some years is using cheek rouge in either compact, cream or dry type. Teen-agers are using lipstick in quantity with cake make-up. Older women have found that rouged cheeks, lightly powdered, are smart for them, and while there is much accent of lipstick this is not as widely used among the older group as in the teen-ager. The use of only lipstick in college and university circles is highly endorsed, and combined with photographic make-up makes a smooth, even appearing skin.

TISSUE CREAMS AND OILS

Cold weather throughout this area has resulted in a larger sale of creams and oils than in some years. Much higher priced merchandise is selling. The idea back of the SRF combination sale is said to be the most outstanding ever offered the industry, and stores not now on the list are begging for this merchandise. It is definitely the answer to a maiden's prayer for the bottle and jar are highly decorative and can well be an asset to any dressing table. The simplicity of the day and night applications has produced repeat business although the item is still very new. The educational program is such that it offers an outstanding example as an excellent presentation.

Now that it is definitely known there will be no nylons before summer tan is fashionable, several cities are pushing good leg grooming. A special stone to remove dead cuticle and hairs is suggested. One buyer's suggestion that this be done in time with radio music resulted in sales 300% over her allotment. Women who refused to shave the hair on their legs because of "danger" now have no excuse for this untidiness beneath sheer hose. It is generally said that leg make-up is approaching its peak sale. Older women are taking a lesson in tanning from teen-agers, who have no time for make-up on legs. The youngsters still go without anything but a good soap and water treatment. Tanned legs will be the big point of sale in 1945's summer campaign.

One merchandise director, speaking of leg make-up, said: "If changes in the preparation can be made to give it freedom from spotting, easy to apply, then we can expect an increase. The only reason for this preparation not being a regular part of every customer's cosmetic shelf is due to the fact that she has about the same luck in applying this as she does in her facial make-up. Both call for constant education. That is a trend we want to cultivate as soon as the war is over."

Creams and "treatment" sales to retain the freshness of youth are having a widespread advertising campaign throughout this area. In contrast to the usual photographs and drawings, showing a teen-ager placing her order for cosmetics, the current idea is to depict the older woman. This is attracting much attention, and many older women feel that at last someone has thought of them and their needs.

Treatment sales of creams can easily be boxed and made a vital part of every sale for 1945, according to buyers who are planning their programs for the new year. The treatment sales include not only those for the face and neck, but for the hands, and for the feet and legs. Yet, it is agreed that cosmetic customers will be choosy—salesmanship of high intelligence will be required.

Processes of Manufacturing Cake Make-Up

Second in a series of articles tracing the development and advancement of dry make-up . . . Use of binders to prevent breakage . . . New tendencies in the manufacture of this item

by JOSÉ MACIAS-SARRIA, PH.G., B.D.

ABOUT three years ago when the dry cake make-up grew up to become one of the most important make-up items, cosmetic manufacturers began to call upon their chemist to create something that would not infringe on the patent. But it was at that time, too, that another California company put their dry make-up cake on the market. Everybody waited for a law suit to follow; it never came (gossiping comments all gave the same reason, although this reason has never been published). This left the door open to other manufacturers. Nevertheless many manufacturers told their chemist to formulate something new and different which would not infringe on the patent.

The first thing was to review the raw materials which the patent didn't include in its exhaustive list. In addition there were new ingredients and here I give a brief account of same:

For alkaline bases we have: Triisopropanolamine; the aminoglycols, etc.

For binders we have, instead of quince seed mucilage, the following much superior ones: Methyl cellulose, aluminum gels, sorbitol borate, potassium caseinate and casein derivative binders, glyceryl borate, sodium alginate, methacrylate gums, etc.

For plastizers, instead of diethylene glycol, we have now propylene glycol which I mention alone for its safety and for its pharmaceutical endorsement.

In the patent formula, we can dispense very well with beeswax (now we have synthetic waxes) and cetyl alcohol and replace their presence with stearic acid or any fatty acids.

Pigments:

Up to this moment I haven't given any sample of pigments. Any liquid face powder pigment would do; off hand I give the following sample, which contains the five most commonly used pigments in cake make-up.

José Macias-Sarria

FORMULA C

Domestic talc	65
Kaolin	15
Zinc Oxide	10
Titanium dioxide	3
Light Calcium Carbonate	7
	100
Colors:	
Sienna ochre	1.
Red oxide	.25

Among all the cosmetic raw material available there was one item, a kind of old one, which already has been the bridge to so many new products (new shampoos, new bath oils, non-alkaline detergents, etc.). This item was sulfonated castor oil. Here was the magic key. It has oil and water miscible properties. It alone with a small amount of mineral oil should be sufficient for making a dry make-up cake.

FORMULA D

Pigments Formula (C)	100 gm
Sulfonated Castor Oil	8.35-33.4 gm
Mineral oil	4.0 gm
Perfume	0.5 gm
Propylene glycol	0.6 gm

In a formula using a lot of sulfonated castor oil, about 25 per cent of it is enough to make a paste-like dough, which can be molded by hand into the containers. In other words, I have duplicated the 1913 make-up paste (Formula B). The adhesiveness to the skin of this product shouldn't be overlooked by leg make-up manufacturers.

When I have used, say, 12½ per cent sulfonated castor oil I can make a good dry make-up cake. The only objection to this formula might be that it doesn't come out smoothly with the wet sponge and sometimes leaves streaks on the skin. Its "non-breaking" properties are very good.

With a low percentage of sulfonated castor oil, propylene glycol is necessary because there is not enough plastizers present. The "take off" by the sponge and the application of the make-up to the face is an improvement, but it breaks badly.

BREAKAGE

Before proceeding any further I wish to discuss the factor which causes more trouble in a dry cake make-up than any other, and that is breakage. However, I shall sum up the physical qualities of a dry make-up cake. First, a nice surface finish is essential. The make-up should come out with the sponge easily, in a nice creamy smooth manner; it should also apply over the face evenly. When drying on the face it shouldn't produce a tight feeling. But the most important factor of all is "breakage." It should stand all the shocks of shipping and the constant traveling in ladies' handbags. This factor is not as simple as it sounds. A great many good formulas which meet all the requirements have to be disregarded on account of breakage. As a matter of fact, I dare to say that breakage is

the main and most important factor in marketing a cake make-up. It is true that metal pans helped considerably, but in times of war manufacturers were compelled to use flexible plastic containers, some cakes stood such a test well. The test for breakage consists of letting the cake dry for a week exposed to room temperature and then knocking it on a solid surface like a marble table. Compare it with the resistance offered by well known trade cakes. The final and most impressive test for manufacturers is to mail the cakes to the Pacific Coast and back again to the East; if the cake keeps well the formula is all right.

BINDERS

The breakage trouble made chemists look around in other directions and we went into the field of binders. Binders alone with a little mineral oil can make a cake make-up.

FORMULA E

Pigments (Formula C)	100.
Powdered Coconut Soap	1.
Pot. caseinate and casein derivative binders	16.
Mineral Oil	4.

Here I have selected as a sample this 50 per cent solution of potassium caseinate and other casein derivative binders because in addition to its excellent qualities as a binder, it reminds me of the Skin Varnish mentioned in the Poucher edition of 1932. A small amount of powdered soap has been added to the aid of wetting the cake. This cake make-up of formula E is excellent as far as breakage is concerned, but it is too hard and doesn't come off easily.

NEW TENDENCIES

The use (and abuse) of wetting agents has marked still another direction in the manufacturing of dry make-up cakes. Since sulfonated castor oil is a wetting agent, it was only natural to follow along such lines. Many of the formulas published here, including the patented one could be marvelously improved by the addition of 2 to 4 per cent of a good wetting agent. But to what extent should we use these wetting agents? Is there a limit to their safety and to their percentage? Even sulfonated castor oil itself might not be inoffensive. Some day I shall publish some of my experiences with these wetting agents, but at this point I have come to the end of my notes on cake make-up. Before ending them, I wish to bring out the following five points:

EXPERIMENTING

These notes have been written for students and amateurs in the cosmetic field; they do not contain any finished formulas. It is left to the student to experiment and balance his formula. Sometimes the low percentage of a single ingredient will cause breakage and by merely increasing the amount of such an item the trouble may be overcome.

PRESSURE

This note has to do with the machine pressure used to compress a dry cake make-up. It seems that a low pressure, under 100 lbs. is sufficient. I believe that foot operated presses come in this range, namely, from 60 lbs. to 100 lbs. Yet, in a hydraulic press you can have a variety of pressures up to 4000 lbs. Some formulas would react different at various pressures; a cake that is satisfactory at the low pressure of 60 lbs. is a practical formula.

COLORS

Since cake make-ups are exposed to the light while on display in store windows, etc., and since it has been found that to the action of different plastizers on colors, the shades change; therefore, the most commonly used materials have been the different ochres or iron oxides. In matching colors of cake make-up and matching colors of face powder, you will find that the final shade of the cake make-up will show only after a week of partial drying, or less time in a well regulated oven; on the other hand, the final shade of face powder can be seen almost immediately.

APPLICATION OF CAKE MAKE-UP

A chemist tests cake make-up by rubbing a wet sponge over the cake, then applying it to his forearm in a long stripe; making parallel stripes of standard brands, one can compare them for covering powers adhesiveness, shades, etc., after drying. A word to the salesladies: Many women apply cake make-up by just rubbing their faces all over and then letting it dry. Such applications when completely dry show streaks, etc., which are difficult to smooth down. If these women, while the application is still wet, would rub and smooth the cake with the tips of their wet fingers, they would discover that on drying the face would show a smooth make-up. After this article was written I came across an illustrated suggestion by Maurice Seiderman, make-up artist of R.K.O. He gives this advice: "To apply cake make-up correctly, wet and squeeze out the sponge and rub it lightly over the cake. Smooth on the face and, before it dries, blend in rouge. Carefully squeeze all water out of the sponge and rub it lightly over the face until the make-up is dry." Mr. Seiderman prescribes to rub the slightly damp sponge after the application while I recommend the use of the wet tips of the fingers.

For older women or for people who do not like a heavy make-up appearance I would suggest to have the sponge quite wet, holding a great deal of water, then take a little of the cake and apply it to the face still holding an excess of water in the sponge, leaving the face wet. Then remove the excess of water from the face by patting a dry towel or facial tissue paper. This will definitely leave a more natural appearance. Here, you see, we have diluted the cake evenly, an effect which is hard to acquire by using a little cake make-up and trying to smooth and smear it all over the face.

Dominican Republic Oils

Exports of essential oils from the Dominican Republic from January through June, 1944, amounted to 50 kilograms, valued at $30. In July, 1944, 343 kilograms were exported, valued at $1,404.

Brazilian Plastic Containers

The Brazilian company Perfumarias Phebo Limitada, of Belem, Para, will use phenol-formaldehyde plastic material for the production of containers for cosmetics and pharmaceuticals, mostly for their own use. It is believed that this is the first time plastic articles have been manufactured in the northern part of Brazil.

At least in the beginning, the consumption of moulding compound will be small, amounting to an estimated 3,000 kilograms. The machinery used is of national manufacture.

The Gossiping Guide to the News

Plan constructively for the New Year . . . Replace the dying product . . . Develop a new market . . . Step up production by training and promoting the good employee

by RAYMOND W. LYMAN

WITH the end of the year at hand, let's take stock. Not the inventory kind of merchandise on the shelves and on order, but a look at what we've accomplished or left undone. Be honest, now. Inventory time's no fun unless progress is accurately gauged. Never get so bogged down with detail that you can't take time to see where you are. Take in the whole picture, too; not just a corner of it.

Keep a score of plus and minus. Then decide you're going to correct the minuses this next year. Above all—don't say "the guv'ment" and throw up your hands at shortages, lack of export, etc. Find a way to remedy the minus. Or replace it. If export sags, develop the domestic market. If one product is dying on its feet, find a way to pep it up, or introduce another.

Lastly, make a New Year's resolution: think constructively. Whenever you catch yourself being downhearted or thinking negatively, take a Turkish bath, have a massage, or go home and have dinner served in bed and read a detective story. If you prefer, take a bus ride or hear some fine music. In short, change the mental atmosphere. Negative thinking never changed or solved a business problem. So get on the constructive side!

ART SCHOOLS

Coming into New York was a Chicago art student; his portfolio full of fine packaging ideas. But not one practical for the stringencies of today. I told him as best I could what he would be up against. Not one word really registered. Not that he was inattentive to what I said, but disbelieving.

Apparently, the art schools need to tie up much more closely with business and financial news. Art can't be a thing detached. If the artist intends to serve business, why not point out business trends?

PACKAGES

Going through the country this last month, I was particularly pleased at the display of ingenuity in war-time packaging. Bouquets would have to go to every house to do justice to the endless work and eye-appealing results. Purchasing agents take a bow. Designers: where would your handiwork be without the purchasing agents like Mr. Reiner or Miss Bradley?

But you want to be complimented anyway? Special bouquets to Mary Chess, Elizabeth Arden, Charles of the Ritz, Lucien Lelong, Gourielli and Primrose House. Each has done a noteworthy job in its field. . . .

PACKAGING FLEXIBILITY

If alcohol is available, one designer told me, a cologne will be marketed in April. If alcohol is needed for other items of the firm, a perfume will be marketed. Two designs have been prepared, taking into consideration the different requirements of the bottles. This designer, by the way, was an art student herself—twenty-five years ago. Today she's as much a purchasing agent as she is designer and has the present problems and future solutions of the industry at her fingertips. She learned it the hard way. But the young student can save a lot of time by reading trade papers and the financial part of the daily paper.

Haven't the windows been superb this Christmas? I'm certain that the public was not conscious of the amount of perspiration that had gone into them. Substitutes for the substitutes for the substitutes! All the window men said they'd never sweated so in their lives. But the windows are worth it.

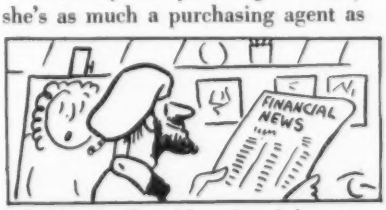
Dallas, Texas, is lucky to have Neiman-Marcus and Harris tying up so well with the gay Christmas packages of Lenthéric, Revlon, Coty. Mr. Jones, of Parfums Lucien Lelong, has come through with a memorable set of small, jewel-like windows which receive this department's bouquet of the month. They are a striking example of what window-art can do with practically nothing.

I. Magnin, Marshall Fields, Bonwit Teller, Scruggs Vandervoort, Lord and Taylor and Julius Garfinckel can all pat themselves vigorously on the back for their Christmas windows and the Christmasy look they managed to give their stores. A deep bow and a batch of bouquets for your efforts. . . .

RE-TOUCHING

I note a real carelessness in many toiletries ads done by the stores. Next to a splendid ad, sent from the agency and run by the store, will be an ad where the house photographs bottles or uses publicity photos without retouching. That is a plain waste of money certainly if the home office has to pay half of the expenditure. And even if the store in question pays for the entire ad, it can do the store and the product no good if the label isn't clearly seen.

My suggestion, therefore, is: have the negatives retouched in the home office before you send them out. Strengthen the lines the same as you would if the ad was to be run in a



Reading the financial section of the news


Re-touching

quality publication. It will raise your costs but pay you back in the long run if the public can see the label.

Retouching on quality ads: don't let down here, either. Send your work to the best people in the business. A group of girls on the train were giggling over a fashion magazine. "Look, her nail's chipped!" White, to highlight the nail had been carelessly applied and gave the impression that the nail enamel was damaged. The old eagle-eyed Guses are gone to war but the rest of you people will have to get on your toes to make up for their absences.

SUPPLY FORECAST

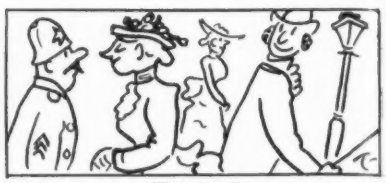
Tough. But that's no news to the purchasing agents. It's been very tough the last two years and will get tougher as the war goes on. Washington tries very hard but executives of other lines can't understand fully the problems of another industry. The amazing thing is that civilian production hasn't been *more* interfered with. Tax revenue being paramount, however, the bureaus do their darndest to keep civilian production rolling.

In the opinion of most business reporters, OPA and FTC should be eliminated save for advisory committees. In every field of industry their record is one of disruption with resulting higher prices. The forms and endless questionnaires, "show cause" demands, and the rest of the complicated twists legal minds can devise when they've nothing else to do, waste time of a third of the average staff, take executive minds off business and generally raise hob. Food prices would be less, textile prices would be less if production was unhampered by endless red tape. Introduce the Stakhanovite system of worker credit and bonuses for increased production and production will up as it always does under incentive. The toiletries industry would benefit from savings to their many suppliers also.

INCENTIVES

Going through various plants you get to know the symptoms of good production or bad. It's not so much the pace of the work as it is the expression on the workers' faces. Some of our older houses have learned the advantage of teaching their people the job higher up so they can advance. Our newer houses haven't yet learned that secret. House organs aren't enough, though they help plenty when they're good. Don't keep your good youngsters at receptionist or hack publicity copying. Give them an opportunity to do some creative work; pay extra for it. Ideas are what count in any business. Desk workers get tired of routine work, so give them a chance at a machine for a half shift.

Going through plants



Victorian Era

COMPLIMENT

Taking a leaf from the suggestion book of this reporter, Miss Dorothy Nichols of Primrose House is lecturing to the fem students of Boston University on hair and skin care. Teaching fundamentals to students is a fine way to build good public relations and get the gratitude of the youngsters for years to come by showing them how to clear up blotches, oily hair and the myriad ills the teen-agers are prey to. Rubbing dirty powder puffs over erupted skins can cause serious skin disorders. So a bouquet to Miss Nichols for her splendid work in this field. . . .

NEW PRODUCTS

Miss Diane Wheeler of Revlon Products Corp. is working on the new shades of lipstick and nail polish for February and April to go with the new high shades. She wisely emphasizes the necessity for proper foundations of the powders so that the new colors will flatter the face. The basic training she received at Primrose House is being put to good advantage for Revlon. Face, neck, hands and clothes should be a co-ordinated whole. To Miss Wheeler goes the bouquet for the best copy for newspaper release to cross this reporter's desk this month. Keep hammering away at the picture of a "co-ordinated" woman, Miss Wheeler, and earn the continued gratitude of busy women by showing them how to do it painlessly and in a short time. And please *sign* your releases as you used to do, it's more flattering to the recipient than "cold" releases!

To Mr. Canaday, of Lenthéric, and Miss Jill Jesse go twin bouquets of large size for their outstanding presentation of their new product, Soft-Focus Night Cream. The women of the country need such a cream badly, as this reporter has often preached. But the box, container and general promotion were splendidly done for war-time. Congratulations!

MAN OF THE YEAR

The medal for outstanding performance for the year? Plenty of men have turned in extraordinary feats in getting the products to market at all, they'll tell you. But for wisdom, long-range, and a fine philosophy of business, my medal of this year and many other years goes to Mr. Cecil Smith, gentle head of Yardleys, Ltd. A "gentleman and a scholar" was the praise originally bestowed on just such a man. Do the best you can, is the only direction he gives his staff. Lucky staff to be given such *carte-blanche*. The presentation of the products shows this infallible method of getting the best performance from everyone concerned in the factory, in the office and on the road. For outstanding performance, sir, you merit the thanks of the entire industry!

BEST PROMOTION OF THE YEAR

This award without question goes to Mr. Herbert Harris, who planned, and Miss Jean Juell, who executed, the main details which produced the full dramatization of *Fabulous* which Parfums Charbert recently introduced. The Victorian theme was chosen and carried out in windows, ads, cards, throwaways, etc. The artists entered completely into the spirit and the house is to be congratulated indeed at the gentle spoofing they sponsored. What a completely fresh note and what a welcome one! The type-face was a modification of the Victorian. In short, everything carried out the motif. Such a rounded effort is endless work. But surely it's worthwhile.

Dr. Ernest Guenther reports increased shipments of oils from Sicily, South America and Madagascar, India, British West Indies but still has no information about the Bergamot trees in Sicily. The oil received was from previous pressings. We can only keep our fingers crossed about them. Oils from Southern France, however, have not materialized as yet due to the difficulties over money basis. Inflation has set in severely in France. (This reporter suggests to the industry that barter be arranged instead of cash exchange. France needs goods badly and if the industry scurries around, barter would be much more advantageous to the French at the present time, than meeting inflated currency demands which would be again too low by the time the monies were received.)

To J. M. Hoctor, of Bristol-Myers export division, goes a bouquet for outstanding work in foreign advertising supporting future sales. How

. . . and a Happy New Year!

I've preached not to let other countries, South American in particular, forget the brands during the time we can't supply them as fully as we'd like. Shipments are easier, I'm happy to report. A large quantity of alcohol has been released which may trickle to colognes and hair-tonics after the boys have been fully supplied for their overseas needs. (But whether you can supply now or not, keep up your foreign advertising! The country papers depend on us for revenue and we will be disliked if we let down too much!) So, Mr. Hoctor, keep up the good work both for your future sales abroad but also for cementing good-will for the United States!

The "Old School Tie" in Business

by RICHARD A. CLARK

Vick Chemical Company

WHAT makes a Yale man yell his head off when the Eli's make a touchdown? Just the simple fact that every living "son" of Eli Yale *BELONGS*.

Belongs to what? To the Yale team . . . he's an active part of the Bull Dog, no matter whether he's earning his way, operating the cleaning and pressing concession, or getting a fat allowance from his old man.

Looks as if Business might take a pointer. Maybe those starry-eyed guys who run colleges don't live in "ivory towers" after all. Anyway the "old school tie" is REAL . . . not the least bit synthetic. Ask any graduate—under or post.

The normal human being is a sociable cuss—give him a shred of encouragement and he'll leap on the bandwagon. He wants to belong. He'd rather be in the parade than watch it. He's a "joiner" by nature. Broadly speaking, Business hasn't taken advantage of this fundamental characteristic of its employees. In the rush to make a better product, to beat last year's sales figures, to pay bigger dividends, to lick competitors, it has thought of employees more as part of the machine than as members of the team.

Just about at this point, you nod your head . . . or maybe you say, "so what?" In either case, it seems as if it's time to toss out a few ideas. There's no Pollyanna slant, no YMCA nor Salvation Army technique, but a recognition and conviction that everybody likes to be treated as if he amounted to something. He wants to feel important, no matter how low his spot is on the organization chart.

First of all, top management has to have an over-all plan. In order to develop the plan, policies have to be formed. Policies must have objectives, and, if the objectives are to be attained, procedures that show how to get there, step by step, must be laid out. Someone has to assume the responsibility for each step, and the details of everyone's responsibility must be clearly stated.

All of this calls for control, and control calls for an organization structure. An organization is constructed with people, and people need supervision. The human factor is the most important one of all, and, if it isn't recognized—the part *people* play in the attainment of business objectives—the over-all plan is going to be messed up.

So let's talk about supervision. Let's get back to that football team that was mentioned in the opening paragraph. The coaches represent top management. They lay out the plans for the plays. They scout the opponents' teams and plan plays to beat them. But they don't keep their plans secret from the members of the team—they not only take the Captain and Quarterback into their confidence, but the whole team is schooled in them. They have blackboard talks and invite suggestions, they improve their strategy and hold scrimmages, and that's the way they win games. And what's more important, the fact that they let even the third string substitutes in on the plans and their formulation, is what develops team spirit . . . and team spirit, born of the whole squad being in on the know, generates the drive that turns a licking into a victory, often against overwhelming odds.

How many supervisors do anything but issue orders? How many ask individual members of their departments to suggest a better way to do the job? How many supervisors take their subordinates aside privately and point out mistakes and show how they can be avoided? How many hold departmental meetings—blackboard talks—and take their people behind the scenes? And when a good job is done, how many supervisors pat people on the back, both publicly and privately?

That's a lot of "how many's"—probably too many. But it may give you the general idea that in order to get the most out of people, you've got to show them the way, treat them as you'd like to be treated—show them how to do their jobs, not by mere talk, but by demonstration and example. Give credit where credit is due, promptly. Develop enthusiasm among them, not only for their own immediate job success, but for the over-all plans of top management. Make them feel that they had an important part in the attainment of management's objectives. That's what's meant by "The Old School Tie in Business."

Short Adages

by R. O'MATTICK

CHRISTMAS, which means so much to a world torn by war, is almost here again. May it be the last war Christmas! We hope that the next Christmas will find a world recovering from battles which make the feuds between Alexander the Great and King Darius for the mastery of the world, look like child's play. It is difficult to say these days "A Merry Christmas," without the words having a hollow sound. We wish to all that the next Christmas will be a very merry one.

* * *

It has been our custom to make predictions at the end of the old year, for the year to come. These predictions do not always materialize but our readers are evidently kind and indulgent for they seem to remember the good guesses we have made in the past and to forget the ones which were far from good. So once again we dip our foretelling pen into the futuristic inkwell and write about the "shape of things to come."

1945 will see the end of the war in Europe—whether in the spring or summer—we do not know. Contrary to most so-called experts, we believe the Japanese will give up soon after the end comes in Europe, probably in the winter of next year. When the end does come there will be plans and discussions and conferences but most people the world over will be so happy that "it's over" that they will not bother much about plans and conferences to prevent future wars. They will hate to think of wars or talk about them.

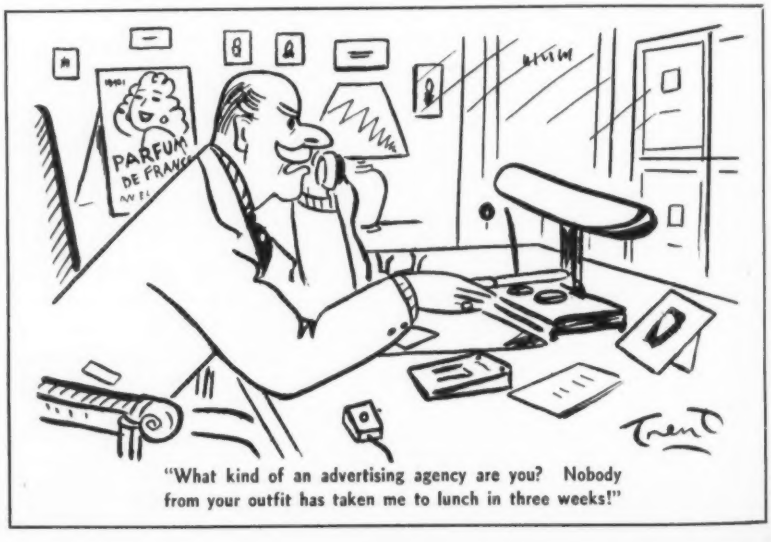
The immediate problem will be one of rebuilding the things which have been destroyed. There will be an endless amount of activity, production for peace commodities, introduction of new methods, materials, machines, devices, gadgets and whatnot. There will be a flood of new ideas, new words, new fashions. In this stream—which will influence every sort of human activity—science, the graphic arts, the theatre, literature, will take on new life.

Perfumes and cosmetics of the post-war period will be as different from those of today as the World Fair Buildings were different from the brown stone houses of 1890. Just how and why we do not know. But they will be. If we knew we would, of course, tell our faithful readers the full details so they could begin thinking about the kind of lipstick or face powder or perfume to market in 1946 or 1947.

Not only will all of the materials which are now curtailed or allocated be released, but many new materials will come into being. New aromatics with the strangest and most exotic kind of aromas will gradually be introduced. First they will be offered in 10 per cent solutions in ounce bottles, then in pound quantities and finally turned out by the drum. The aldehydes and ketones which became so important after 1918 will become as old-fashioned as rosewater and orange-flower water. Animal fixatives will still be used but they will be as limited as dyes from the madder-root plant are today.

There will be plenty to do and plenty to plan and to develop, design and introduce. Dr. Rowmaterial, who has been looking forward to retiring from his active career of forty-odd years after the war, says that if it all is going to be this way, he will be too excited and too interested to want to retire. "These young fellows" (who will be doing all these wonderful new things), said he, "may want an old fellow like myself to look at them just to tell them that they are all too new-fangled, so that they can go right ahead and put them out on the market."

"I remember," he continued, "when I was a young man, back in 1902 and 3, and we were first thinking of making cosmetic creams without using all the ingredients that Galen specified about two thousand years before our time. The older fellows looked on us with horror. But we kept fooling around and now look at all the modern emulsifiers we have and the thousand and one ingredients and perfume oils to work with. In those days, there was nothing but beeswax, mineral oil, rose water and a few other such products. You may wonder why these young fellows who will be doing all the wonderful things in 1945 will want to bother with the comments and opinions of us old codgers. Well, I will explain why. We old fellows will admire them (perhaps secretly envy them and the new world at their feet), but we will not discourage them and sneer at them or suppress them. We will not stand in their way. With misgivings we will yield to them and give place to them. At heart, we old fellows are not reactionary or even conservative. We are too old to make innovations and too tired to make improvements, but we know that progress goes on. It is the middle-aged men who are the conservatives and cling on to old methods. They stand in the way of progress. They see the young fellows coming up to replace them and they want to hold on. We, on the other hand, take a fatherly or perhaps grandfatherly interest in the young fellows.



"What kind of an advertising agency are you? Nobody from your outfit has taken me to lunch in three weeks!"

New Price Schedule for Essential Oils

by OUR BRITISH CORRESPONDENT

A LETTER to the press by W. A. T. Wheeler, Chairman of the Advisory Committee of the Essential Oils Control, refers to the use in market reports of the terms "controlled oils" and "free oils." It is entirely erroneous, he says, to deduce that only those oils listed under the former head are the subject of control, and that all other oils are "free."

The scheme governing the importation and distribution of essential oils which was issued under the authority of the Ministry of Foods, and came into operation on July 1, 1943, applies to all essential oils imported since that date. Some oils, particularly those received from the U. S. A. and Sicily, are imported by the Ministry, and in the case of these oils it is possible to calculate exactly the price to be paid by the user; prices for these oils have been published.

In the case of those oils imported under license, however, it is not possible to lay down the exact price to the user because this is affected by various factors, notably marine and war insurance, which cause slight variations. It is not, therefore, possible to publish prices for these oils, but exactly the same measure of control exists as in the case of oils imported by the Ministry. When the scheme came into operation there existed in this country certain stocks of essential oils which were imported under licenses which did not impose any restrictions. These stocks were not brought within the scope of the scheme and are, therefore, free of control. They can, therefore, be sold on the open market and in such cases two prices may exist for the same oil; the one ruling on the open market and the other applicable under the scheme; the former generally being very much higher than the latter.

The essential oils control has issued the following new and revised schedule of prices for oils imported in original packages by the Ministry of Foods for distribution under the 1944 program. Prices for ten of the oils mentioned have been previously advised to the trade, but are included here to give one comprehensive list.

	Basil	Bergamot	Camphor	Caraway	Cedar-wood	Clary Sage	Coriander	Fennel	Lemon C.P. or Sicilian
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Notional c.i.f. price	22 5	20 10	1 6	18 0	3 0	115 0	114 6	9 9	15 0
Ministry's Landing Charges	0 4	0 4	0 1½	0 4	0 2	0 6	0 6	0 3	0 4
Ministry's price to A.R.	22 9	21 2	1 7½	18 4	3 2	115 6	115 0	10 0	15 4
4% Levy on Notional c.i.f.	0 11	0 10	0 1	0 9	0 1½	4 7	4 8	0 5	0 7¼
2% A.R. on Notional c.i.f.	0 5½	0 5	0 0½	0 4½	0 0¾	2 3½	2 4	0 2½	0 3¾
A.R.'s price to D.P.D.	24 1½	22 5	1 9	19 5½	3 4¼	112 4½	122 0	10 7½	16 3
D.P.D.'s 5%	1 2½	1 1½	0 1	1 0	0 2	6 1½	6 1	0 6½	0 9½
D.P.D.'s delivery charge	0 4	0 4	0 2	0 4	0 2	0 7½	0 9	0 4	0 4
D.P.D.'s price to user in original packages	25 8	23 10½	2 0	20 9½	3 8¼	129 1½	128 10	11 6	17 4½
Plus Import Duty at every stage	2 3	—	—	1 10	0 3¾	11 6	11 6	1 0	—

	Lemon Dist	Lime	Nutmeg	Orange (Bitter)	Pepper-mint	Tangerine	Vetivert	Wormseed	Ylang Ylang
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Notional c.i.f. price	10 0	41 2	19 9	16 6	32 6	28 10	33 8	13 1	13 4
Ministry's Landing Charges	0 3	0 4	0 4	0 4	0 4	0 4	0 4	0 4	0 4
Ministry's price to A.R.	10 3	41 6	20 1	16 4	32 10	29 2	34 0	13 5	13 8
4% Levy on Notional c.i.f.	0 5	1 7¾	0 9½	0 8	1 3½	1 2	1 4	0 7	0 6½
2% A.R. on Notional c.i.f.	0 2½	0 10	0 4¾	0 4	0 8	0 7	0 8	0 3½	0 3¼
A.R.'s price to D.P.D.	10 10½	43 11¾	21 3¼	17 4	34 9½	30 11	36 0	14 3½	14 5¾
D.P.D.'s 5%	0 6½	2 2¼	1 0¾	0 10½	1 8½	1 7	1 10	0 8	0 8¾
D.P.D.'s delivery charge	0 4	0 10	0 4	0 4	0 6	0 6	0 6	0 4	0 4
D.P.D.'s price to user in original packages	11 9	47 0	22 8	18 6½	37 0	33 0	38 4	15 3½	15 6½
Plus Import Duty at every stage	—	—	2 0	1 7½	—	—	3 5	—	1 4

NOTES—Purchase tax applies to wormseed oil only and the amount of such tax will form an addition to the price to the user. The price on the sale to a user will be increased in the case of all oils shown above by the authorized charges for breaking bulk where incurred. Prices for pineneedle oil as originally published are no longer operative; revised prices will be published in due course.

More Beeswax Available

An Office of Price Administration ruling, effective November 11, 1944, has, in effect, made more beeswax available to users in the United States. This ruling increased the price which importers may pay abroad for pure crude beeswax from 31¼ cents to 33¾ cents. The price which importers may charge for sales has likewise been increased 2½ cents, from 37½ cents to 40 cents per pound. It is planned to have manufacturers of finished goods absorb the increase so that the price of the finished goods to consumer will not be effected.

This action was taken because this country depends on imports of beeswax, and our stockpile level was critically low. This is a commodity in heavy demand by the War and Navy Departments.

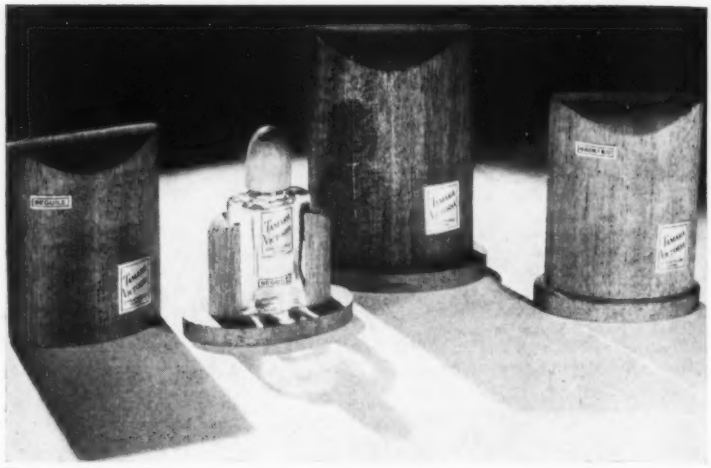
The previous price, which was established in 1942, had created an abnormal differential between African and United States prices. The increase permitted applies to pure crude beeswax from Portuguese West Africa.

Brazilian Rosewood Oil

Brazil's production of rosewood oil in 1942 amounted to 267 tons.

Packaging Portfolio

Tamara Victoria: A new line of perfumes packaged and merchandised by Tamara Utgoff, the former concert harpist. The line consists of Heavenly Body, Beguile and Tidal Wave. The bottles are encased in hand-made, natural finish, mahogany cases.

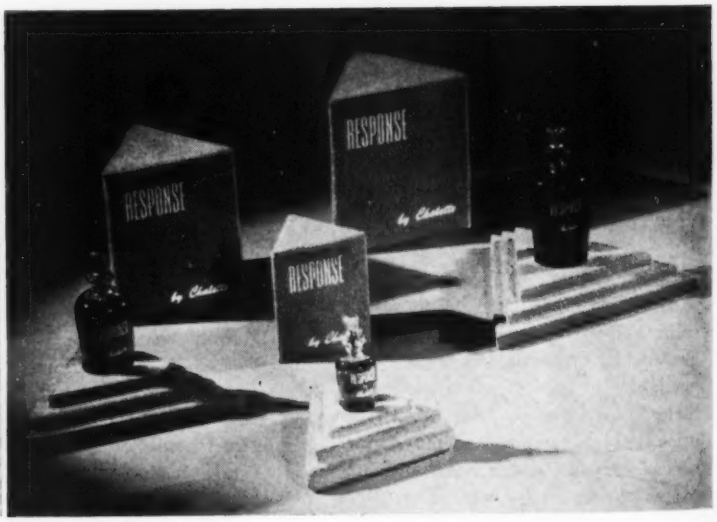


Tamara Victoria

Chalette Parfums: A new and delightful perfume, Response, is shown in its unusual and gay package. To prevent evaporation of this precious perfume, a patented stopper is provided. Response is presented in three sizes.

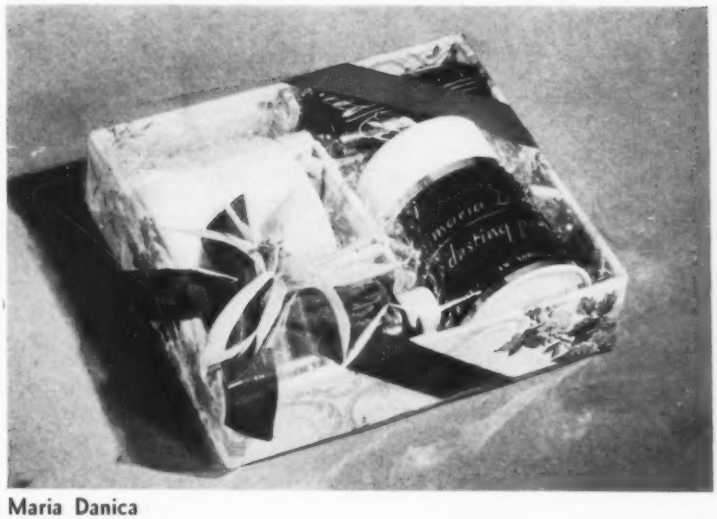
Schiaparelli: A new, super-blended powder, Radiance, is suitable for the blonde or brunette. Dali painted the label on the heart-shaped purple box lined with red; Schiaparelli thought up the pale blue rayon satin drawstring bag which holds the powder drum.

Schiaparelli



Chalette Parfums

Jean Naté



Maria Danica

Horwitz and Duberman

Jean Naté: "1-4-3" is the new perfume named for an old lighthouse in Boston Harbor, Minot's Light, known as Lover's Light. It is packaged in an aqua blue box trimmed with gold. The hexagonal bottle is topped with a large gold cap, and the numbers "1-4-3" appear between ridges.

Maria Danica: Special non-drying soap; a four-ounce bottle of Wild Oat Bath Essence; a four-ounce bottle of Wild Oat Liquid Sa-Shay and dusting powder make up this elegant Christmas gift set. The box is decorated with grosgrain ribbon and flowers, the former making a handsome utility box.

Horwitz and Duberman: Judy 'n' Jill is the brand new and totally different perfume created especially for the junior miss. A light fresh scent prettily packaged in a distinctive green print package, the perfume comes in three sizes.

Mary Dunhill: Pink Lustre make-up is the new versatile color which can be worn by blondes or brunettes. The lipstick is a warm red having a pink cast. Matching rouge, either cream or dry; a soft Pink Lustre face powder; and the new make-up mist, "Face It," complete the harmony.

Mary Dunhill

Technical Abstracts from Scientific Literature

These brief abstracts listed provide a convenient key to current scientific literature of the world on perfumes, cosmetics, soaps, dentifrices and other preparations

A Simplified Method for the Preparation of Aluminum Acetate Solution. F. Wratschko. *Wien. phram. Wochschr.* **75**, *255-6, 1942; Chem. Zentr. 1942, II, 2719.* Seventeen parts of aluminum (turnings, foil or powder is activated with 5 parts of mercury acetate (mercuric oxide 1, dilute acetic acid 19) and is dissolved in 250 parts of dilute acetic acid and 928 parts water. This procedure is suitable for use at the prescription desk. (Through *C. A.* **38**, *3087, 1944.*)

Improvements in the Properties of Titanium Pigments. A. A. Krasnovskii and V. S. Kiselev. *J. Chem. Ind. (U.S.S.R.)* **18**, *No. 6, 16-21, 1941; Chem. Zentr. 1943, I, 90; cf. C. A.* **37**, *2195.* Addition of oxides of aluminum, zinc, magnesium, calcium and barium to titanium dioxide pigments improves them. The improvement increases with ionic radius of the oxides and also depends on the oxidation-reduction potential and position of the metals in the list of driers. Manganese, chromium and iron salts also improve the pigments. (Through *C. A.* **38**, *3147, 1944.*)

Hair-waving Solutions. *Brit. 550,-746.* A composition for use in the "permanent" waving of hair contains sodium sulfite 50 gm, sulfonated castor oil 6 gm, ammonia 8 gm, glyceryl monostearate 10 gm and water to make 320 gm. (Through *C. A.* **38**, *1592, 1944.*)

Symptoms of Hydrogen Sulfide Poisoning Reported. H. S. Howes. *The Aanalyst,* **69**, *92, 1944.* An investigation of eye trouble reported in a tannery disclosed painful soreness of the eyes, tears which burned the cheeks and severe photophobia. It was quickly found by holding a piece of wet lead acetate paper in the air around the workers, that hydrogen sulfide was present. Once satisfactory air circulation was established, the trouble disappeared without recurrences. The author calls attention to this manifestation as a timely warning of possible, serious poisoning from hydrogen sulfide.

Substitute for Albumin in Photolithography and Photoengraving. C. D. Hallam and A. Haigh. *Process Engraver's Monthly* **49**, *180, 1942.* The authors suggest casein as an efficient substitute for albumin. A stock solution can be prepared from the following solution: casein (60 mesh) 100 gm, water 1350 cc, ammonia water specific gravity 0.88 15 cc and 20% ammonium dichromate 150 cc. When the casein solution is used in the same way as dichromated albumin, it prints somewhat faster, so that exposure can be reduced. A preservative, such as phenol, thymol or nitrobenzene should be added if the solution is to be kept longer than about a week. (Through *C. A.* **38**, *1437, 1944.*)

New Acne Treatment. Jacob H. Swartz and Irvin H. Blank. *J. Am. Med. Assoc.*, **125**, *30, 1944.* Sulfated oils are believed to cleanse the skin better than usual types of preparations. They produce no lather. The parts are cleansed three times daily by a preparation consisting of 25 parts sulfated oil, 25 parts mineral oil, and 50 parts of water. A small amount of the preparation is poured into the hand and rubbed over the unmoistened skin with the fingers. Once applied, massage in for a few minutes and rinse with warm water.

After cleansing, an application of equal parts of saturated boric acid solution and 70% ethyl alcohol is applied. Comedones are removed with the usual extractor twice weekly, preceded by the application of sulfated oil and borated alcohol. Two "shake lotion" formulas are given for patients requiring this additional treatment.

Melting and Solidification of Cacao Butter. J. Buchi and P. Oesch, *Hundert Jahre Schweiz. Apoth. Ver. (Centenaire soc. suisse pharm.) 1843-1943, 333-41, 1943.*—Cacao butter, originally m. 33.5°, has a transformation temperature at 36-37°. If heated above this temperature and cooled without stirring, the solidification point (I) is between 14.8 and 17.0° and the m.p. is 28-29°. Heated to 36° and cooled but not stirred, the I is 23.3-23.9°. The duration of warming has no influence on the I. Stirring results in a I of 25-26° of cacao butter heated to 35° or over and a m.p. of 32-35.5°. The m.p. of cacao butter solidified without stirring, originally m. 33.5°, was 31.4-33.2°. The m.p. of the unstable form appears to be 28.0-28.5°. These temperatures must be considered in the preparation of products like suppositories. Thus where it is not necessary to heat above 35°, rapid solidification can be obtained by avoidance of heating above this temperature. If necessary to heat above 35°, use only 9/10 of cacao butter called for and add the remainder during the cold stirring of the product. (Through *C. A.* **38**, *1894, 1944.*)

Hair Loss in Male Dogs Fed Stilbesterol. R. M. Mulligan. *Proc. Soc. Exptl. Biol. Med.* **54**, *21-2 (1943).* Male dogs given stilbesterol orally for several months lost patches of hair from various parts of the body. (Through *C. A.* **38**, *407, 1944.*)

Medical Progress. Skin Changes of Nutritional Origin. Harold Jeghers. *New Engl. J. Med.* **228**, *678-86, 714-23 (1943).* The diseases discussed include carotenemia, phrynoderma, keratosis follicularis, ichthyosis, Sjogren's syndrome, cheilosis, angular stomatitis, purpura of vitamin-deficiency origin, palmar erythema and "dyssebacia." 167 references. (Through *C. A.* **37**, *6717, 1943.*)

Flavors

Mexican Vanilla Picture

Preliminary reports are to the effect that the vanilla crop to be harvested in Mexico will amount to 150,000 pounds, one of the smallest in years. This is a result of adverse weather conditions. The state of Vera Cruz, which ordinarily produces 95 per cent of all vanilla grown in Mexico, has been suffering from drought for several months, and it is feared that some of the older vines may have been killed. If this is true, production may be affected for several years as it takes three years for new vines to bear.

Vanilla grown in Mexico is all exported. It is sold almost entirely to buyers in the United States.

Haitian Sugar

This has been the best year in the history of the Haitian sugar industry. Stocks at the beginning of the season amounted to 44,926 tons, the highest they have ever been. The year's production amounted to 63,926 short tons, which brought the total available volume to 108,721 tons. Most of this has been exported, to leave only 16,583 tons as a carry over, after 14,728 tons had been set aside for domestic consumption.

Post-War Cocoa Squeeze

It is anticipated that a post-war squeeze may develop in Europe on cocoa. Preceding the war the average use of cocoa, excluding Germany, amounted to 400,000,000 pounds annually. There is no carry over to meet this demand at the end of the war, except for 300,000,000 which is held in England. New supplies are not expected in the volume necessary to meet the demand.

From 1936 to 1938, this country imported an average of 568,000,000 pounds of cocoa annually from Brazil, but there seems to be a tendency on the part of suppliers to hold the product off the market to force up ceiling prices. Brazil is second in the world production of cocoa, producing 17 per cent of the total. It is outstripped by the African Gold Coast.

The Gold Coast formerly supplied 43 per cent of the world total, but this may not be the case after the war's end. Production has declined because of low prices, shipping difficulties, and tree disease. Restoration of production, through the planting of new trees, will be slow, as the trees do not bear until the fifth year.

Dominican Republic Cocoa

This year the Dominican Republic is using about 40 per cent more cocoa beans than were consumed in 1943.

There are no estimates of the winter crop, the harvest of which begins about the middle of December, but it is expected to be smaller than last year. Local manufacturers have no stocks on hand so they will be forced to buy from the producers to fill orders for export, and for domestic use. This may result in reduced shipments to the United States. It is anticipated, depending upon the size of the crop, that local consumption will amount to from one-third to one-half of the winter production. Next year's main harvest promises to be of good quality and abundant.

Canadian Apple-Juice

The Canadian army has been supplied with apple-juice, enriched with vitamin C, since 1941. The product supplants tomato juice as being an all Canadian product, and an economical substitute for imported citrus juices. After the end of the war the juice will be made available to the general public.

Production of apple-juice in 1940 amounted to 407,193 cases. In 1943 this figure was 170,534 cases.

Swiss Chocolate Industry

Switzerland's chocolate industry before the war consisted principally in the manufacture of milk chocolate bars. Exports amounted to more than was consumed domestically. Since 1939, as a result of the shortage of materials with which to manufacture, exports have practically ceased.

The importation of cocoa into Switzerland through navicerts has sharply reduced in 1943, but was returned to normal at the beginning of 1944.

The price of cocoa beans delivered in Switzerland has increased almost 300 per cent, as a result of increased production costs, and higher land and sea freight rates. The Government has allowed private firms to import cocoa, but controls the importation of sugar.

Powdered milk which cannot be stored indefinitely has been used extensively, due to the shortage in the milk supply.

Nuts, raisins and grape sugar, although expensive, have been used extensively in the manufacture of candy bars to provide labor for old employees. Sales of this expensive merchandise has been satisfactory.

Colombia's Cocoa

An effort is being made to augment the production of cocoa in Colombia through experiments which are being conducted in the Cauca Valley. Roughly, about 15,000 acres are planted to cocoa in this area, and from it about 30 per cent of the national production was obtained in 1943.

Witch broom disease has not appeared in Colombia, and this plus the fact that the importation of cocoa is limited by law makes the growers in the Cauca Valley optimistic of the future of the industry there. Rising prices are also present on the local wholesale market.

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Ethyl Alcohol Released to Civilians

THE War Production Board has released two million gallons of ethyl alcohol for non-beverage civilian use. This was done without any restrictions relating to quotas under Order M-30.

This release of alcohol for certain civilian uses is without allocation control over the individual customers, or the quantities of alcohol which these customers may receive. This is done by releasing the alcohol to the producers for distribution to groups of end-users covered in the paragraphs C(1), C(2), C(3), C(5) and C(6) of Order M-30. The groups include drugs and pharmaceuticals, food products, candy glazes, tooth cleansing preparations, witch hazel, all toilet preparations and cosmetics, antiseptics and mouth washes, and flavoring extracts. The order is as follows:

(Allocation Order M-30, Direction 2)

(a) *What this order does.* Under this direction the War Production Board will release a limited quantity of ethyl alcohol through trade channels for certain civilian non-beverage uses without allocation control over individual customers to be served or the quantity that each may obtain. This will be done by releasing a quantity of ethyl alcohol to the producer for distribution for each of the groups of end uses covered in paragraphs C(1), C(2), C(3), C(5) and C(6) of Order M-30. Alcohol released in this way may be delivered, received and used for the particular end use group without any limitation based upon past use, and without further War Production Board authorization. It will not be necessary for anyone to apply to the War Production Board for permission to deliver, receive or use this alcohol.

(b) *Authorizations to producers.* Whenever the supply of ethyl alcohol is such that additional quantities may be released for civilian non-beverage uses, the War Production Board will equitably apportion the additional quantity available among alcohol producers, and will, of its own motion, authorize each producer to distribute or use specified quantities for certain groups of end uses, without any limitation based on past use and without the necessity of any further authorization under order M-30. Quantities released under this direction may not be delivered by producers after midnight, December 31, 1944. There is no time limit on redelivery or use of the ethyl alcohol released pursuant to this direction. Deliveries may be made without regard to preference ratings but only for the use of end user groups specified by the War Production Board. Producers shall deliver only when purchase orders are accompanied by certificates of proposed use which conform to the use for which the alcohol was released, and only after the producer has advised each purchaser, in writing, that the ethyl alcohol was released under this direction. Deliveries of this alcohol are subject to all the restrictions of paragraph I (1) of Order M-30, except that the provision in paragraph I (1) (iv), limiting the quantity which may be received, is not applicable.

(c) *How to obtain ethyl alcohol released under this direction for resale or use.* No one other than a producer needs any War Production Board authorization to get this alcohol. Preference ratings are inapplicable to obtain this alcohol. Any person other than a producer desiring to get alcohol released under this direction should contact his supplier and accompany his purchase order with a certificate that the ethyl alcohol will be used or redelivered only for the specified purpose for which the alcohol has been released. Distributors may only redeliver this alcohol on purchase orders accompanied by certificates of proposed use which conform to the use for which the alcohol was released, and only after the distributor has advised each purchaser, in writing, that the ethyl alcohol is delivered under this direction. Deliveries of this alcohol are subject to all the restrictions of paragraph I (1) of Order M-30, except that the provision in paragraph I (1) (iv), limiting the quantity which may be received, is not applicable. The certificate may be endorsed upon the purchase order and shall appear in substantially the following form, signed either manually or as provided in Priorities Regulation No. 7:

> **The undersigned hereby certifies to the seller and to the War Production Board that the ethyl alcohol ordered on his Purchase Order #————, dated ————, will be used or redelivered by him for the end uses appearing in paragraphs C (1), C (2), C (3), C (5) and C (6) (strike out inapplicable paragraphs) of Order M-30.**
>
> **————————————**
> **(Name of Purchaser)**
> **By————————————**
> **(Signature and title of duly authorized official)**

No person who receives ethyl alcohol released under this direction may use it for any purpose other than that appearing on his certificate. Persons acquiring this alcohol may use it without any limitation based upon past use, and without the necessity of obtaining any War Production Board authorization under Order M-30.

Black Market Sugar

The Office of Price Administration has filed a complaint against the Hi-Grade Extract Co. of Chicago, Ill., claiming that the firm had violated the Maximum Price Regulations of the O.P.A. The complaint claimed price violations on corn syrup sold both within the United States and for export outside of the continent. Damages sought amount to the sum of $120,524.13, which represents treble damages.

An order requiring the Hi-Grade Extract Co. to pay a fine of $70,000.00 was entered on October 25. The O.P.A. claims that they have thus broken up the biggest black market in corn syrup operating in the middle west. The agency claimed that four million pounds of corn syrup had been diverted from their rightful channels.

Misbranded Flavor

As the result of an action by the Food and Drug Administration a specific lot of crystal lemon flavor has been destroyed. The libel was against a lot of flavor which was labeled as containing dehydrated lemon juice, citric acid from citrus fruits, corn sugar, lemon oil, and certified color, whereas it contained, in addition to the ingredients, calcium phosphate. The latter was not mentioned. Furthermore, a company statement to the effect that "one-half teaspoon will make an 8-ounce glass of lemonade, if sugar is added" was untrue as imitation lemonade would be the result.

The product's label failed to bear in type of uniform size the word "imitation," and immediately thereafter the name of the food imitated. The product was made of two or more ingredients, and the label failed to bear the common name of each such ingredient.

Sugar Situation

The coming sugar beet harvest and a seasonal slackening in the demand for refined sugar are expected to restore equilibrium to the national sugar situation. Stocks of beet sugar have been subnormal, owing to the small sugar beet crop harvested last season.

During the first 8 months of 1944, primary distributors of sugar made available about 4,400,000 short tons of sugar for consumption in continental United States, about 450,000 tons more than was so distributed during the same period of 1943. Among the causes cited by the War Food Administration for the increased use of sugar in 1944 is the heavier volume of home and commercial canning permitted by more abundant fruit and vegetable crops.

Supporting the increased consumption of sugar were the 3,800,000 tons of offshore raw sugar received, principally from Cuba, Hawaii, and Puerto Rico during January-August, 1944. These receipts were about 550,000 tons greater than sugar entries for the same months of 1943.

Heavy Citrus Damage

The War Food Administration has reported heavy damage to citrus through the hurricane which hit Florida and the Atlantic coast October 19 to 21.

Estimated production of grapefruit in Florida is now placed at 20,500,000 boxes, instead of the 36,000,000 boxes previously anticipated. The previous crop amounted to 31,000,000 boxes, and the ten-year average is 18,060,000. Production of seedless grapefruit is expected to be 7,800,000 instead of the anticipated 15,000,000 boxes. Other varieties are not expected to exceed 12,700,000 boxes, a reduction of 40 per cent. These revised figures include fruit already shipped. The quality of the fruit has been reduced due to the effect of the storm.

Production of Forida oranges is expected to be 42,000,000 boxes, 10,000,000 boxes below the previous estimate. The ten-year average production is 13,815,000 boxes. Only a small proportion of the windfalls will be salvaged.

The crop loss in tangerines is reported to be less than that for grapefruit and oranges. It is now estimated that 4,400,000 boxes will be harvested, a reduction of only 6 per cent under that previously reported.

French Oceania Vanilla

During the first half of 1944, about 80 tons of vanilla beans were exported from Tahiti, Society Islands. Consequently, exports for the entire year will probably be better than was previously expected.

Army Shortages

Housewives, who have been searching store shelves for their supply of holiday spices, will have to emulate the Quartermaster Corps and try to get along with substitutes for seasoning.

As far back as June, 1944, the Quartermaster Corps, foreseeing a shortage of spices, issued instructions to reduce by one half the allotment of black pepper on all Master Menus. In addition to that curtailment, nutmeg and cinnamon have now been removed from all menus for the coming year. Cinnamon substitutes, such as are being used in other countries, are not permitted here due to restrictions of the Pure Foods and Drugs Act.

Nutmeg and mace, the latter being the ground husk of the nutmeg, normally come from Granada, British West Indies. However, the prospect of importing these spices from the Caribbean this year have been blasted by crop damage caused by the recent hurricane.

Black pepper, and many other spices, are imported from the Dutch East Indies, while the best grades of cinnamon, known as saigon and cassia, come from Sumatra, Java, and parts of China, all of which are now under Japanese control. With the exception of a small amount of low grade cinnamon coming in from Ceylon, there have been no appreciable imports of spices since the beginning of the war.

Black pepper, which is in greater common demand in this country than any of the spices, requires ten or more months from the time of harvest until it finds its way into American pepper shakers, but, according to War Department reports, no imports of any size are expected until conditions in the South Pacific have changed materially.

Turkish Lemons for Export

The production of lemons in Turkey is up from 100,000,000 in 1943 to 150,000,000 to 200,000,000 this year. The increase is sufficient to permit export of that part not needed for local consumption. The growing area is in Antalya, Icel, Seyhan, and Hatay Vilayets.

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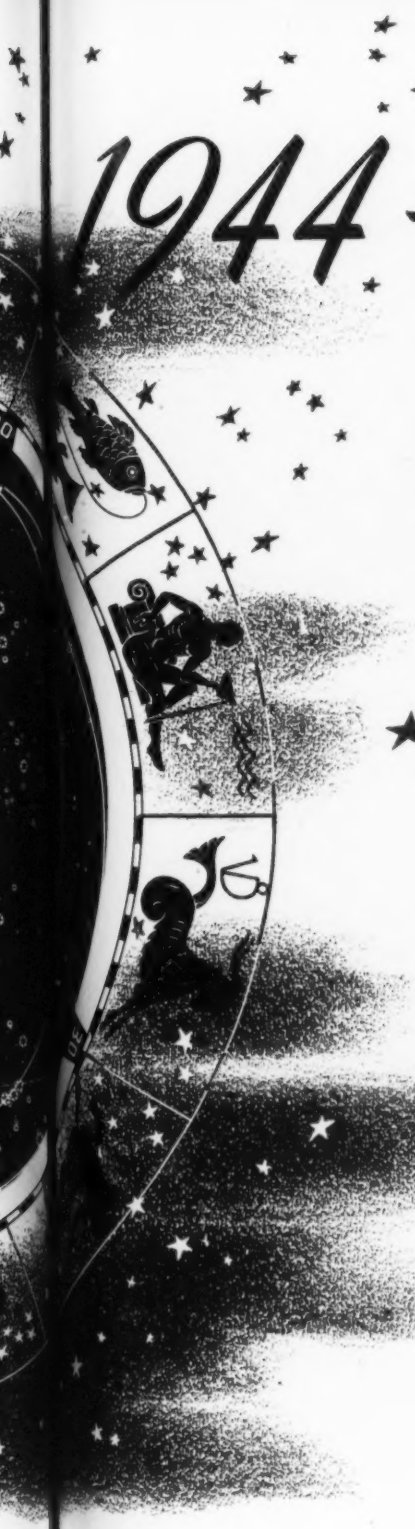

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Soap Fights Industrial Dermatitis

Speed-up in industry chief cause of occupational dermatitis . . . Effective preventive measures discussed . . . Cleanliness, the greatest protection of all

by GEORGIA LEFFINGWELL, PH.D.

ALTHOUGH the prevalence of industrial dermatitis was an important medical problem prior to the war, the current speed-up of industry has increased the frequency of these skin disorders.

DEFINITION

Before proceeding further it might be well to explain just what is meant by occupational or industrial dermatitis. Although several quite precise and highly technical definitions have been given, in a broad general sense, it may be described as any irritation or an inflammatory process of the skin developed by a worker in the course of his or her employment.[1]

According to Schwartz[2] of the United States Public Health Service, more time is lost on account of occupational dermatitis than from any other occupational disease. As far back as 1938, it was estimated that industrial dermatoses comprised about 70 per cent of all occupational disorders.[3] The normal frequency of occupational skin diseases compared to all other skin diseases is about two to one, according to Government findings.[2] Redden[4] recently remarked that a large proportion of a dermatologist's practice is made up of the examination and treatment of these industrial skin diseases.

The skin is exposed to hazards in practically all industries and the number of substances that may act as skin irritants in industry is manifold and numerous. Almost any substance will cause irritation if an individual is sensitive to it, but in the main, the agents most frequently responsible have been determined and rated. Chemicals, including plants, are the most frequent causes of occupational dermatoses.[3] Under normal conditions these, in decreasing order of importance, have been found to be as follows: petroleum oils and greases; alkalis, including cement and concrete; solvents; chromic acid and salts; metals, including metal plating; dyes; rubber and its compounds; paints and varnishes; synthetic resins; etc. Step-up of war industries has brought new agents, like tetryl and mercury fulminate, into the dermatoses picture.

Some persons are more prone to industrial skin diseases than others. The factors which enter into this predisposition have been listed as follows: race, perspiration, diet, age, sex, season of the year, other dermatoses, cleanliness, hypersensitivity, and allergy.[3] Women's skin is notoriously more sensitive, of a finer texture, and therefore more prone to contact dermatitis and irritation from industrial exposure.[5] Their incursion to war industries has undoubtedly been a major factor in increased emphasis on the importance of cleanliness, the installation of better sanitation facilities and the increasing popularity of skin protective preparations.[6]

While all of these factors play some part in the dermatoses picture, "lack of cleanliness," says Schwartz,[3] "is the most important predisposing cause of occupational dermatoses." A survey by the National Association of Manufacturers[7] similarly revealed that, "uncleanliness of the skin is the greatest predisposing cause of dermatitis."

The proverbial "ounce" is especially applicable in modern industry because occupational skin disorders are to a large extent preventable.[3] The importance of preventive measures is evident in the statement of a leading public health authority[2] in the observation that, "if a chemical irritates the skin, it may also affect the entire system. Protecting the skin may save the whole body." Further in his report, he states: "cleanliness is by far the most important single measure for the prevention of industrial dermatoses."

It is not surprising that there is remarkable unanimity of opinion

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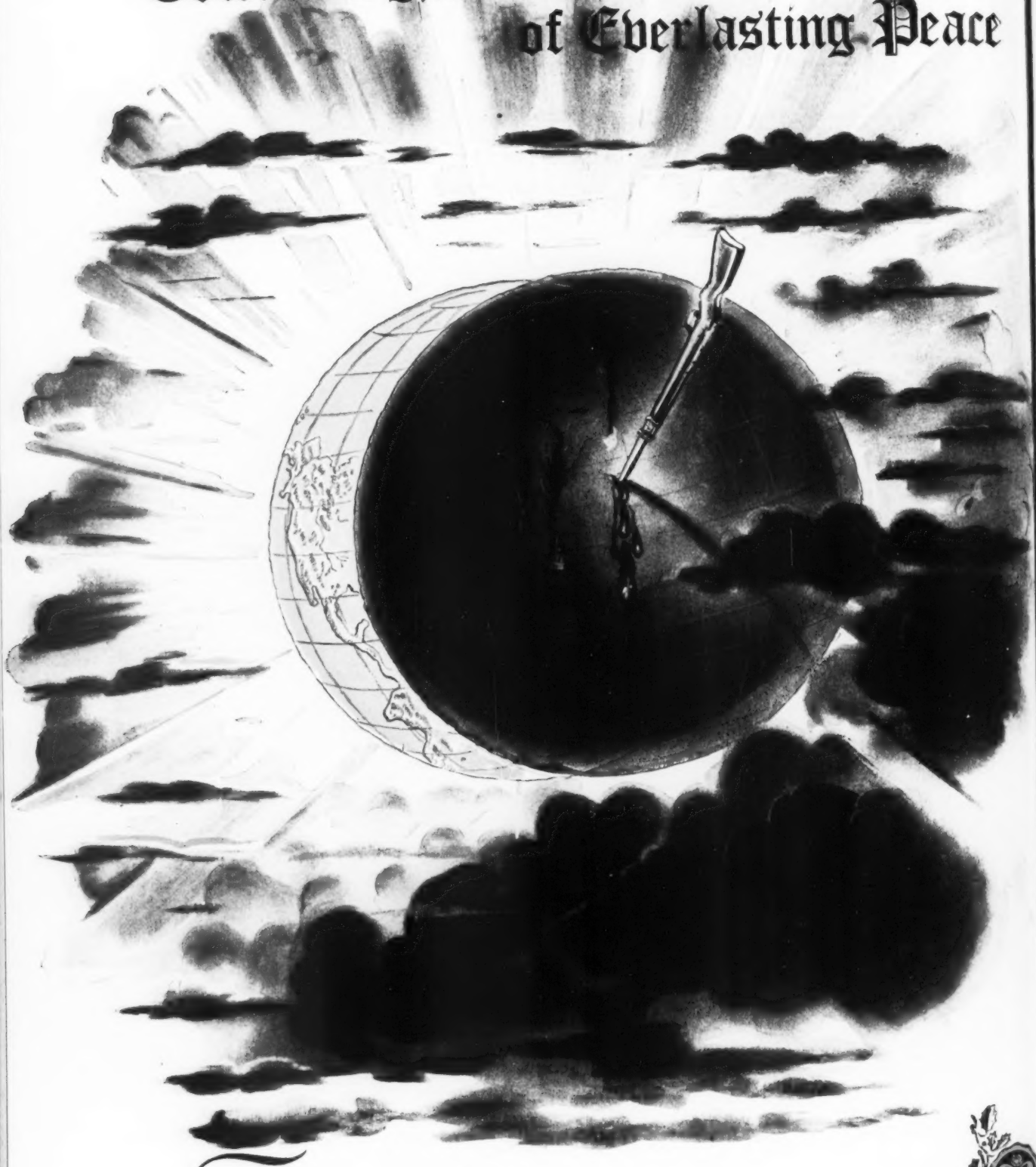

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among authorities that cleanliness is a major factor in the prophylaxis of industrial dermatoses.[1, 2, 4, 7, 8, 9, 10] Welton,[11] for example, feels that the proper cleansing of the skin is the most important and effective preventive measure of all. Similarly, Moody[12] states that personal cleanliness of the worker is a very important item in dermatitis control and should claim a prominent place in any effective effort to lessen the incidence of skin trouble. In his opinion personal hygiene, such as bathing and washing, the frequent laundering of clothes, and other measures which help keep the body clean, together with healthy habits are first line defenses against skin infection.

The role of soap in such a program is quite obvious. In the comprehensive report prepared by the Committee on Occupational Dermatoses of the American Medical Association[13] appears the statement: "The best cleanser is a mild toilet soap and plenty of warm water."

No elaborate means are required when preventive measures are based upon the use of the soap and water. It is imperative, however, that adequate washing and hygienic facilities be provided to make these measures effective. Clean, fully equipped washrooms, including full supplies of soap, clean towels and water, not only prevent industrial skin disorders when properly used by workers, but also raise the morale and efficiency of workers.[14] Cleanliness, accessibility and ventilation are of outstanding importance in the design of washrooms, locker rooms and other employee facilities. As remarked by Maynard,[15] proper attention to these requisites is a sound investment, one that pays for itself.

AVOID IRRITATING CLEANSERS

Abrasives, alkalis, solvents and other harsh, defatting or otherwise irritating cleansers must be avoided since these agents themselves are frequently responsible for dermatoses. Occasionally, soap has been held to blame for certain cases of skin irritation. These are generally considered to be instances of hypersensitivity. Lane and Blank,[16] in their report on cutaneous detergents, cite the observation that even in groups having excessive exposure to soap, relatively few manifest skin irritations of sufficient intensity to cause them to seek the advice of a physician.

Of particular pertinence are the extensive studies of Klauder, Gross and Brown.[17] They feel that, with the exception of soaps in powder form containing alkaline salts, the role of soap used for toilet purposes as an eczematogenous agent has doubtless been exaggerated in view of its universal and frequent employment and the dilute solutions of soap and its ingredients as applied in washing.

The wearing of protective clothing is another major weapon in the defense of the skin against occupational dermatoses. It is self-evident, however, that such garments defeat their own purpose unless they are clean, changed often and laundered regularly.

SKIN PROTECTIVE CREAMS

Constantly growing in importance and acceptance as added means of warding off the hazards of cutaneous irritation and injury are the products generally known as skin protective creams. Soap is a frequent constituent of many of these skin protectives which are intended for application to the hands and other skin surfaces before exposure to excessive dirt, grime and grease, which are difficult to remove from the skin, or to industrial poisons likely to cause dermatitis. Such creams form a film on the skin, the film acting as a barrier to substances likely to irritate the cutaneous surfaces. The deleterious substances are removed along with the film at the end of the work period, and ready removal by simple washing with soap and water is considered a prime requisite of such protective products.

As remarked by Schwartz,[2] workers generally dislike to wear protective clothing but seem to have a particular liking for the use of protective ointments. Then, too, gloves are often unsuitable for many operations in industry and the work must be performed with bare hands. He feels that the washing with soap and water to remove the protective film adds considerably to the value of the protection given by the cream.

The role of soap in such products is evident by its inclusion as a major ingredient of one of the six basic type formulas described by Schwartz,[18] and included in the report of the Committee on Occupational Dermatoses.[13] This type formula (No. 4) provides protective ointments containing non-irritating chemicals to neutralize industrial irritants. Thus, boric and benzoic acid are recommended to neutralize industrial alkali, soaps and magnesium hydroxide to neutralize industrial acids; and non-irritating oxidizers such as dichloramine T to detoxify vesicant gases. The soap-containing type formula, as presented by Schwartz is given below:

Magnesium carbonate	5.0 parts
Talc	5.0 "
Soap	30.0 "
Lanolin	30.0 "
Castor Oil	28.0 "
Duponol	2.0 "
Perfume	sufficient

Recently it was pointed out that the best known hand protective cream was a product consisting of soap, glycerine, water and sodium silicate.[19] Products based on such ingredients are grease and oil repellent. Formulas using such components have frequently been described in the literature, including patent sources. Over a decade ago, for example, James[20] recommended the following protective ointment:

White soap flakes	7.48 parts
Glycerine	26.40 "
Sodium silicate	24.20 "
Tragacanth	0.21 "
Oil of lemon	0.16 "
Water	41.60 "

Tyler[21] mentions that a commercial product, using soap as an important ingredient, which came out a number of years ago, has the following approximate composition:

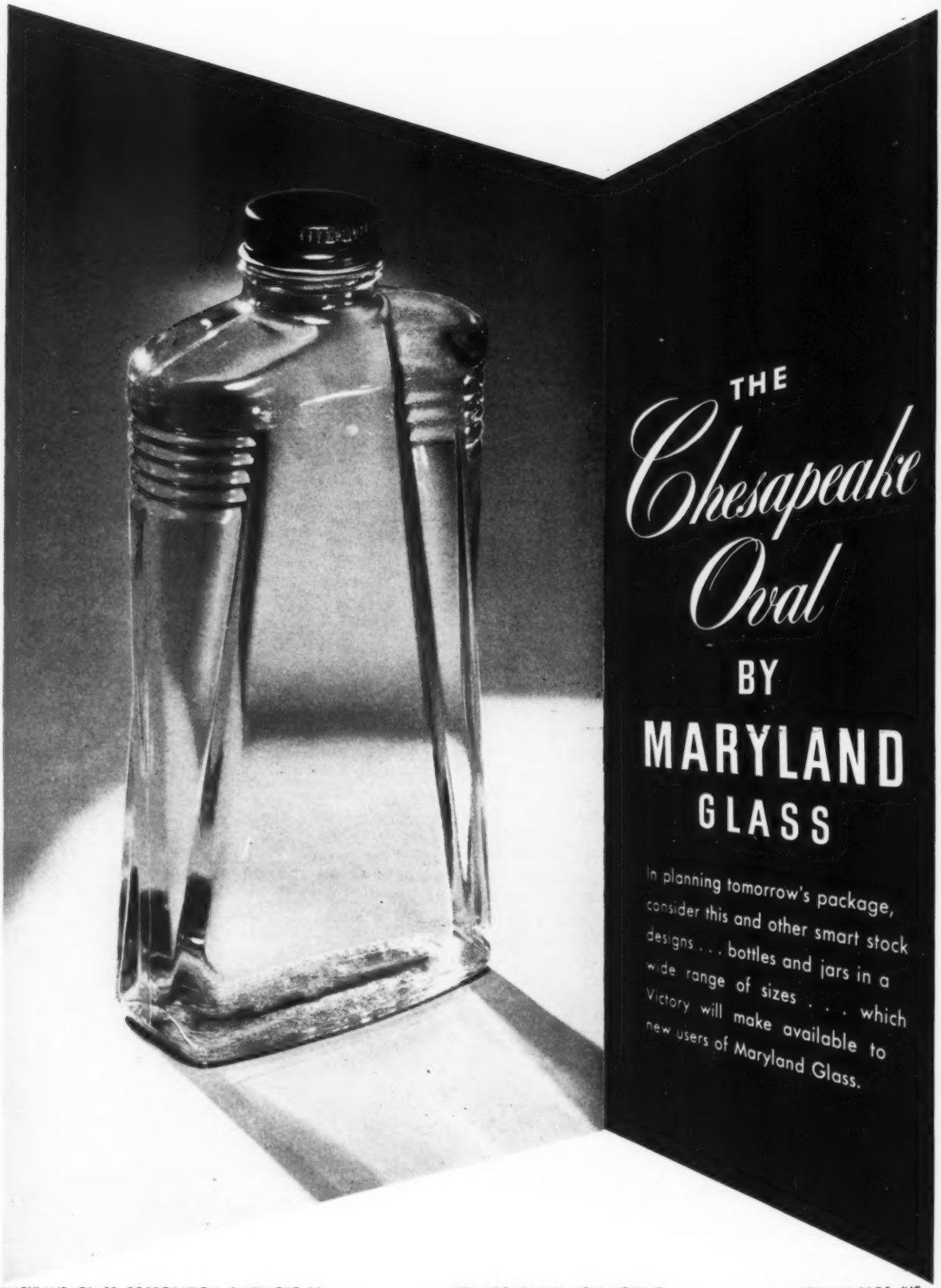
Tallow soap	6.0 parts
Glycerine	28.0 "
Sodium silicate solution	19.0 "
Water	47.0 "

This is quite similar to a patented product[22] containing:

Sodium stearate	288.0 parts
Sodium silicate	906.0 "
Glycerine	1155.0 "
Water	1600.0 "
Lemenone	1.0 "

More elaborate is the patented protective "third skin" developed by Oliver.[23] Recommended for use by gasoline station attendants, auto mechanics, painters, printers and other workers who come in contact with substances that cling and are difficult to remove from the skin, a typical formula is as follows:

Sodium soap	128 oz.
Waterglass (sodium silicate solution)	100 oz.
Glycerine	100 oz.
Potato starch	2 oz.
Distilled water	32 lb.
Cottonseed oil	3 oz.
Perfume	sufficient



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Other soap-utilizing protective cream formulas are available. For example, a product for general application in factories, machine shops, munition plants and the like to prevent grease and grime from becoming imbedded in the skin, may be made from:[21]

Stearic acid	5.0 parts
Lanolin	5.0 "
Soap chips (88%)	8.0 "
Magnesium stearate	10.0 "
Glycerine	3.0 "
Water	44.0 "

Soft (potash) soaps may also be employed to make skin protective creams of the same type, as in the following example, from the same source:

Stearic acid	12.0 parts
Lanolin	3.0 "
Glycerine	6.0 "
Potash soap (40%)	5.0 "
Magnesium stearate	10.0 "
Water	50.0 "

Both of the above products are of the emulsion type and are prepared in a similar manner. The soap is dissolved in warm water and the melted stearic acid and lanolin run in with continuous stirring, and the glycerine then incorporated. The magnesium stearate is mixed in with constant stirring and the entire mass preferably milled while still warm. About one part of perfume, such as one with an "antiseptic" odor, may be included if desired.

Where a more greasy preparation, with somewhat higher water-repellent properties, is desired, the following should serve:[24]

Lanolin	20.0 parts
White chip soap	8.0 "
Glycerine	2.0 "
White petrolatum	3.0 "
Zinc oxide	2.0 "
Water	65.0 "

Another product of the same type is composed of:

Petrolatum	13.0 parts
Glycerine	5.0 "
Talc	12.0 "
Potash soft soap (40%)	10.0 "
Water	60.0 "

A very simple protective hand cream, with soap as the major ingredient is made from:[25]

Gum arabic	20.0 parts
White chip soap	80.0 "
Water	sufficient

Used with enough water to make a product of the required consistency, the protective is applied to the hands before using dry pigments, lacquers, enamels, paints. Water suffices to remove the materials from the skin.

Soap, therefore, has several important roles in any program of dermatitis prevention, but its most essential part is its place in basic cleanliness. As Leggo[9] has remarked: "The greatest protection of all, however, is still personal cleanliness. No amount of experimentation with creams, protective clothing or other measures will justify a neglect of cleanliness."

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Soap Standards

The War Food Administration has withdrawn restriction order FDO 86. As a consequence, soap manufacturers are now required to restore their products to the same size, quality and serviceability as of July 17, 1942. It was at this time that manufacturers were required to comply with standards in the manufacturing of soap products under OPA's Commodity Practices Regulation 1, in order to keep operating under price control. It is not necessary that the identical making up the total anhydrous soap content is restored to the percentage existing prior to the establishing of the order just revoked, and provided that the substituting of any fatty acid, oil or resin going into the total anhydrous soap content does not lessen the quality or serviceability of the product.

Switzerland Soap Rationing

Individuals in Switzerland are allowed slightly over 80 points for soap per month. Some idea of the value of the points may be obtained through the fact that one small cake of a United States brand soap requires 60 points, and a box of soap flakes requires 220 points.

Soap rationing for public institutions during July, August and September, 1944, were as follows: Hotels, 50 per cent of 1940 consumption; restaurants and tea rooms, 40 per cent; hospitals and sanitariums and other institutions, 80 per cent. Therapeutic bathing establishments were allowed 70 per cent of 1938 consumption; offices, 40 per cent; doctors, dentists and midwives, 80 per cent; factories, 50 per cent; food shops, dairies, 70 per cent; public baths, 40 per cent; hairdressers, 500 points monthly per employee; pedicures, 250 points monthly; druggists, 70 per cent of 1938 consumption.

Hotels and restaurants which sent their laundry out for washing before and during 1940 were permitted 10 points per kilogram of laundry, which were given to the laundry doing the washing. Householders were also required to give laundries 10 points per kilogram of laundry. In addition, laundries were entitled to points representing 10 per cent of their pre-war soap consumption.

Spanish Sage Oil
Orange Oil Expressed
Pine Needle Oil
Exquisite Perfume Bases
Fine Flavors

Please write for samples!

Your best source for all Essential Oils.

STANDARD SYNTHETICS, INC.

30 West 26th Street **New York 10, N. Y.**

CHICAGO • SAN FRANCISCO • KANSAS CITY, MO.

New Products, Ideas and Processes

Carbon Copy Pencil

The Reliance Pencil Corp., has put on the market a new, patented pencil which they claim is capable of making five or more carbon copies which are clear and vivid. The pencil is made with a patented lead, and an exclusive process of bonding lead and wood is used. Strength of from 25 to 75 per cent more than the average pencil is claimed by the makers.

New Cake Soap Size

The Mem Co., New York, N. Y., has placed on the market a new, extra large cake of soap for men. Every cake weighs almost a pound, and will last practically a year.

Testing Magnifier Set

A set, consisting of magnifiers of three powers, in a kit, is now on the market, manufactured by the R. P. Cargille Co.

The complete kit consists of three wide field magnifiers with built-in illuminating units, operated by battery and by electric control. The magnifiers are of 7 power, 20 power, and 40 power. The 40 power unit is equipped with a 0.001 in. scale. They may be used independent of outside illumination.

Magnifier Set

They are intended to provide laboratories and inspection departments with a means to observe details not otherwise visible, through the choice of magnification and illumination. They are used for inspecting powdered raw materials for uniformity, for deterioration and for contamination by mold and foreign matter; for inspecting plated surfaces for texture, pin holes, cracks, etc., for inspecting enameled surfaces, and for other uses in the laboratory and shop.

A leaflet is available, giving details, at no charge.

Cold Wave Solution Manufacturer

The Vacuum Distillation Co., 617 N. Kingshighway, St. Louis, Mo., manufacturer of coal wave solution, is devoting its entire facilities to the production of this product.

Catalogs

The United States Department of Labor has issued a 28-page booklet, bulletin No. 66, which is available without cost as long as the supply lasts. The title is "The Foreman's Guide to Labor Relations."

A new catalog of Surveys has just been issued by J. J. Berliner & Staff. Copies will be sent gratis upon request.

by ARNOLD KRUCKMAN

ASSISTANT Director of the WPB Chemicals Bureau, Walter G. Whitman, is responsible for an official declaration that "the present supply and demand pattern indicates the most critical phase of the alcohol program is practically over. Requirements for industrial alcohol for 1945 are estimated at 536,000,000 gallons 190 proof alcohol and there is expected to be available a potential supply of 607,000,000 gallons, if all facilities operate at capacity and expected imports materialize."

ALCOHOL PROGRAM

WPB made these pleasant words realistic by announcing that ethyl alcohol comes under Order M-300 on January 1, 1945, as schedule 71. In the meantime, of course, it remains under Order M-30 until midnight December 31. After the fading of the old year, any user may obtain 54 gallons per month without applications or documentation, providing, of course, he has Treasury approval. The 54-gallon freedom comes under the small order exemption, as part of Schedule 71 of Order M-300, and applies to ANY user, whether he has a historic background of past usage or not. If he can find a supplier who will sell him alcohol, he is entitled to the 54 gallons. No one has said much about it, but this relaxation is the direct result of the George Reconversion Law, and the application of the law as made mandatory under the direction of the Smaller War Plants Corporation. Beginning October 3, 1944, it was illegal for any Government agency to make new allocations of any materials on the basis of the past usage by a seller or producer of the material distributed under an allocation order. The law requires that any producer, whether he has been in business 50 years, or one day, is entitled to his share of materials made available for non-war uses. All the user now needs to get a monthly supply of 54 gallons is to secure Treasury certification.

Those who purchase from 55 to 3,500 gallons must certify the end use of their purchase on the order. Those who use over 3,500 gallons each month must apply on Form WPB 2945 to the Chemicals Bureau of WPB for a direct allocation, and must file the application on the 5th of the month preceding the month when the supply is desired. Incidentally, the supplier, in turn, in his application Form WPB 2947, must show where his orders originate.

Under the new arrangement it is not mandatory that the supplier fill your order. It is wholly at the discretion of the supplier to determine who shall receive alcohol. WPB realizes there is a chance that the supplier may practice discrimination against one category of users in favor of another; or that the supplier may give preference to one customer over another. But, on the other hand, it also is true that the user, the purchaser of the alcohol, may shop around, and may buy from whom he wishes. The operation under Schedule 71 is intended to approximate unrestrained competition in selling the quantity of alcohol available. There are five groups of users defined in Schedule 71. Toiletries, cosmetics, flavoring extracts, mouth washes, and similar merchandise come under Group B, which also includes candy glazes and other food products. The supplier is obliged to report not only to whom he sells, but he must show the sales and the quantity of sales in the various groups. It is anticipated inequities either intentional or unavoidable will quickly be revealed, and can swiftly be corrected.

Present distribution of alcohol is expected largely to provide the information. In principle the 2,000,000 gallons of 190 proof ethyl alcohol, released for unrestricted distribution on November 13, under Direction 2, M-30, are made available under the same plan. The bugs in the plan are expected to appear as these 2,000,000 gallons are distributed by or before December 31. Toiletries, cosmetics, flavors, dentifrices, and similar products, were placed in Class 2. It was made mandatory that all purchase orders must contain end use certifications, and any alcohol released to producers must be used for the designated end use. No preference ratings were required. Deliveries based on the 2,000,000 gallons may be made by suppliers up to midnight December 31, but the users may resell or use it without time limitation. Bear in mind, always, these relaxations apply only to the 2,000,000 extra gallons made available on November 13. These 2,000,000 gallons were released in addition to the so-called bonus of 25 per cent which was allocated to the civilian users of industrial alcohol, over and above the original allocation.

ALLOCATION OF LANOLIN

Lanolin was made available late in November for the cosmetic and toiletries industry to the extent of 150,000 pounds. It was designated as the allocation for November and December. But since it came so late that there was practically none to be had in November the quantity for both months will be released to users in December. It is not known what the uses for military purposes immediately ahead may be. It is not unreasonable to assume they may absorb all the lanolin now apparently in prospect for non-war uses. However, if the military do not suddenly develop an unexpected and extraordinary need for the material

ADVERTISEMENT—*This entire page is a paid advertisement.* *Prepared Monthly by U. S. Industrial Chemicals, Inc.*

U.S.I. CHEMICAL NEWS

December ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1944

Aroplaz 1311 Replaces Scarce Alkyds in Baking Finishes

U.S.I. has just announced a new resin, S&W Aroplaz 1311, which promises to help fill the serious current need for a plasticizer resin which can be used in essential civilian bake-coatings to take the place of resins made from highly restricted phthalic anhydride.

Baked enamels, employing vehicles based on urea and melamine-formaldehyde, have outstanding hardness and color retention. Porcelain-like refrigerator finishes so made, for example, are extremely white, and stay that way. They are also very resistant to moisture, chemicals and abrasion though low in gloss characteristics.

Such coatings must be correctly plasticized as well as modified to improve their gloss; otherwise the urea and melamine-formaldehyde finishes would be entirely too brittle, too low in sheen and would have poor adhesion.

For this purpose, properly formulated alkyds perform very well. However, due to the present scarcity of phthalic anhydride, such alkyds are obtainable only for the most important military end uses. As a result, essential civilian requirements for many bake coatings can not easily be filled.

S&W Aroplaz 1311 fills this gap quite well for many otherwise restricted end uses. Combinations with it do not bake quite as hard as with phthalic alkyds; but they are sufficiently glossy, tough, color-retentive, flexible and adhesive to be entirely suitable for most purposes.

Compatible with Nitrocellulose

S&W Aroplaz 1311 is also freely compatible with nitrocellulose. Therefore, it is useful in lacquer formulation, acting as both a resin and a plasticizer. It is a semi-drying type resin.

Specifications

Solution	59-61% solids in High Solvency Naphtha
Viscosity	S-V
Acid Value of Plastic	25-30
Color (G.H. 1933)	8-10
Wt./gal. at 25° C.	8.2

U.S.I. Announces New, Interesting 48-Page Book

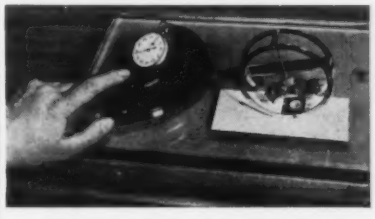
Profusely illustrated with color plates and black and white photographs, this new book, "U.S.I. in the World of Chemistry," reviews the story of U.S.I. chemicals. It outlines the part U. S. I. is playing in the war, its role in the peace to come, and suggests many interesting future developments.

U.S.I. will be glad to furnish a copy to anyone interested in industrial chemicals. It is requested that you write for the book on your letterhead.

Unusual Instruments Developed for Resin Research and Control

Novel Melting Point, Viscosity, Hardness and Other Tests Employed at U.S.I. Newark Laboratories

Equipment and techniques for testing the physical properties of resins and protective coatings have had to keep pace with the giant strides this industry has made since the comparatively recent introduction of synthetic resins. As a result, many devices and methods have come into use which may still be "news" to other branches of the chemical industry. With the thought that these developments may be of general interest, or suggestive of ideas adaptable to other fields, CHEMICAL NEWS pictures here a few of the less familiar instruments used in the new and modern U.S.I. resin laboratories.



***Film hardness*, is measured by this simple but surprisingly consistent Sward rocker test. Calibrated to make 50 oscillations, as measured by two carefully adjusted bubble levels, on glass, the instrument gives the relative hardness of dried finishes. The harder the surface the longer the instrument rocks. It is also valuable in studying drying rates, solvent release and progressive oxidation.**

New Plastic Composition Is Easily Removed from Molds

Some form of "lubricant" is necessary for the removal of molded organic thermoplastics from their molds after forming. In the extrusion method, it has also been found desirable to assist the flow of the plastic through the extrusion orifice by the addition of lubricants.

The inventor of a new compound claims that all of the present lubricants have been deficient in some respect, such as excessive brittleness, objectionable odor, softness, and discoloration. According to his claims, lubrication is attained, with none of the adverse factors formerly encountered, by adding a lower alkyl radical containing from 1 to 8 carbon atoms to the molding composition.

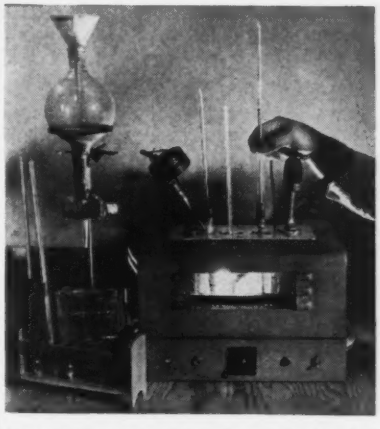
One example given is a plastic mix containing cellulose acetate, diethyl phthalate, triphenyl phosphate and methyl 12-hydroxy stearate. Effortless release from both hot and cold molds is claimed for this mix.

This type of addition agent is claimed to have similar advantages when used with nitrocellulose and other cellulose esters, and in compositions of styrene, vinyl esters, acrylic esters and like polymeric resins.

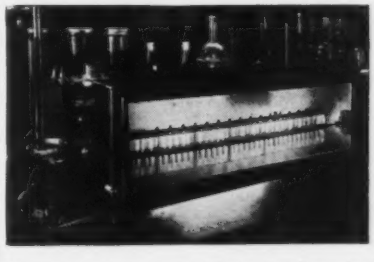
Fluorescence Suggested as New Test for Stored Foods

Following the discovery that it is possible to measure quality of stored eggs by their development of fluorescence, measurements have been tried on other types of foods.

A correlation has been discovered between fluorescence and the palatability of foods such as pork, bananas, linseed oil and various carbohydrates. Further applications of fluorescence to food testing seem to be indicated.



***This melting point test* is a far cry from the days of the capillary tube! Three grams of resin are melted in a test tube, allowed to solidify, and then covered with 50 grams of mercury. In a carefully controlled oil bath, the tube is heated until melted resin appears on the surface of the mercury. A thermometer in the mercury gives the melting point. This U.S.I.-developed test gives exceptionally uniform results and has been adopted by many other resin laboratories.**



***Viscosity* of transparent solutions is determined by measuring the speed at which an air bubble rises through the liquid. Shown here is the constant-temperature bath in which the sample is compared with a row of Gardner-Holdt tubes containing standardized solutions. The tube rack is arranged so that all tubes can be inverted simultaneously. The more viscous the sample, the slower the bubble rises.**

(Continued on next page)

December ★ **U.S.I. CHEMICAL NEWS** ★ 1944

Pregnane Series Yields Sex Hormone Substitute

One of the androstenols, a compound of the pregnane series, when administered perorally, is claimed to have the effect of the female sex hormone, corpus luteum.

According to a recent patent, androstendione-3,17 is dissolved in benzene and then treated with ethyl orthoformate, absolute alcohol and alcoholic hydrochloric acid. After heating and cooling, the solution is rendered alkaline with alcoholic sodium hydroxide solution, mixed with water and extracted with ether. Following this extraction, the dried residue is recrystallized from pyridine containing alcohol.

A solution of the androstendione-3-enol-ethyl-ether, benzene and ether is flowed into a solution of potassium acetylide in liquid ammonia. After standing and the addition of benzene, the mixture is poured into water. The benzene-water-ether layer is then washed several times with water and evaporated to dryness under vacuum.

Without further purification, the residue is dissolved in ethanol, aqueous hydrochloric acid is added and the mixture is heated. Concentration and cooling crystallizes out pregneninolone which is then filtered and recrystallized from chloroform-alcohol.

Inverted Sugar Production Facilitated with Ethanol

To increase the production of dextrose and levulose, a recently patented process separates these sugars from a concentrated solution or syrup by treatment with ethanol and subsequent agitation.

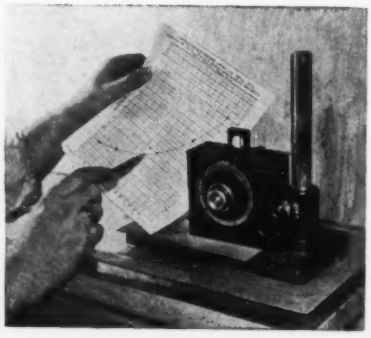
Essentially, the process consists of preparing a concentrated sugar solution, adding ethanol, agitating vigorously, and allowing the dextrose to crystallize out. The dextrose crystals are then separated from the mother liquor either by filtration or centrifuging.

Distilling the ethanol out of the mother liquor leaves a levulose syrup. Raising the pH value to about 3.5 with hydrochloric acid, concentrating to a Brix of 96 deg., and adding ethanol prepares the syrup for the crystallization of levulose. From this point on, the process is identical with the process described above for the separation of dextrose.

Unusual Instruments

(Continued from preceding page)

***To test shear-hardness,* a sample of the coating, applied on metal, is rotated by hand on the table of this Taber Abraser. Pressure on a stationary blade is gradually increased until the blade cuts through to the metal. To test abrasion resistance, the blade and supporting arm are replaced by a pair of carborundum wheels indirectly driven electrically. These abrade the surface by shearing action.**



***Film thickness* is measured magnetically right down to the thousandth of an inch in this Magne-Gage. The only requirement is that it be a non-magnetic coating upon a magnetic background.**

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A natural anti-oxidant, designed to preserve the flavor of foods containing either animal or vegetable fats, has been developed by a leading university and is now in commercial production. This substance, which looks like sugar, is derived from the creosote bush. **(No. 878)**

USI

Solventproof, transparent garments are offered, including gloves, caps, aprons, smocks, and sleeve guards. The full line is described in a new, free 16-page booklet. **(No. 879)**

USI

High wet strength filter papers, claimed to be practically tearproof when folded, are announced for laboratory and industrial use. Additional features are said to include resistance to dilute acids and alkalis and freedom from lint. **(No. 880)**

USI

Paint that resists up to 2500° F is announced. The paint is said to be non-inflammable, and to adhere to steel under temperatures up to 1400° F, and to alloy, brick and similar surfaces up to 2500° F. **(No. 881)**

USI

A new, self-bonding, resilient floor, said to feel like rubber and wear like stone, is announced for application over old cement, wood or composition floors without use of adhesives. It is claimed to dry in 36 hours, and to require no special application skill. **(No. 882)**

USI

A safe acetyl peroxide solution is now being offered in research quantities. Long known as an outstanding polymerization catalyst, bleach, and germicide, acetyl peroxide has been rendered non-explosive and immune to shock by dissolving it in dimethyl phthalate, according to the announcement. **(No. 883)**

USI

A green pigment, designed to add color to cement, paint and rubber, is announced. It is stated that this green pigment compares favorably in alkali and acid resistance qualities to chrome green. **(No. 884)**

USI

A new adhesive, developed by an aircraft manufacturer, is described as being capable of "sticking almost anything to anything". Among the claims made for the new adhesive, which is available as a liquid, paste, or tape, is that it will bond aluminum to steel in spite of their different coefficients of expansion. **(No. 885)**

USI

A fabric-treating chemical, said to make sheer stockings run resistant, and to remove shine from serge suits and make fabrics wear longer is on the market. The new treatment may be applied either by spraying, immersion, or sponging. **(No. 886)**

USI

Imitation chrome finish, claimed to produce an excellent simulation of real chrome, is offered in the form of a paste. **(No. 887)**

it is probable the allocation for January and February will duplicate the present allocation. Department of Agriculture declares the major factor that will ease the present squeeze in oils and fats would be the reopening of the Asiatic, or Far Eastern, oilcrop-bearing areas to world trade. The 1944-45 supply is expected to be well under 10,000,000,000 pounds, over a billion pounds less than the year before. On the other hand, the demand will be greater. United Kingdom, Russia, France, Belgium, Holland, and Italy all are expected to draw upon us heavily. Lee Marshall, WFA Director of Distribution, warns victory in Europe will NOT reduce the pressure upon us for oils and fats. WFA has revoked Order 38 which restricted the use of palm oil. WFA also has removed import controls from castor oil, castor beans; and glycerine, crude and refined; inedible olive oil, and all hydrogenated oils or fats, animal or vegetable.

MANPOWER SHORTAGE

There has been considerable unofficial but serious discussion about devising such relaxation in the M-81 metal can order as to enable the use of blackplate for unrestricted production of cans to hold talc and similar products. The blackplate is abundant, but the tin is absolutely unavailable until we regain control over Malaysia where our supply of tin comes from. The chief present obstacle to production is the lack of manpower. Until the manpower situation is made easier there is little hope of immediate production of cans. Those who are responsible seem to think, however, that some adjustment may come soon. The situation in relation to paper boxes and the various paper containers urgently needed by the industry, is about the same. There is plenty pulp, but there is little manpower to transform the pulp into containers. An effort has been made to utilize the power of the spot authorization regulation for the purpose of obtaining manpower, but the various controlling Committees—PUC and WMC—have withheld approval because the armed services have opposed any moderation. Smaller War Plants Corporation is strenuously striving to immunize from labor controls those who employ 50 or less on the Pacific Coast, and 100 or less elsewhere, providing they do not attempt to secure more workers. WMC is reported to be in favor of the modification, but the armed forces will not accept the plan.

COSMETICIANS ESSENTIAL

WMC recently announced 18 skilled trades for women which it designated for WMC Apprentice-Training. It will interest you to know that cosmeticians are among the 18 trades. Under the WMC plan the women trained in these trades are regarded as essential to meet war production requirements. Apparently skilled cosmeticians are deemed necessary to maintain morale in war plants and in critical labor areas. Women are being employed in war industries in far greater numbers under present pressure conditions. It has been found that communities where there are scant beauty shop facilities quickly lose their women workers. In the Kaiser plants they have installed the best equipment and the most skilled operators they can find. It will be recalled in these columns several years ago we reported a similar experience in England, which prompted the British Government to offer free beauty shop services in some plants, and to guarantee a supply of face powders, face creams, and similar materials, in all places where women worked on war jobs.

The recent steel industry wage decision did not grant straight-time general increase. It is likely that Congress will declare 65 cents an hour as the minimum wage scale, defining it as the lowest in the bracket just beyond "substandard." Vacations with pay apparently will be granted to all workers who demand a ruling from the WLB. Severance pay will be legally encouraged. Those who work by the hour are regarded as entitled to holiday pay. Night work has been justified by WLB rulings as entitled to a higher scale. The steel 5 to 10 cents an hour increase is expected to be the pattern which will prompt workers in many other industries to press for increases not directly involved in the formula that controls the basic wage.

If by chance—and it is regarded as largely a chance—Congress adopts the recommendation of the House Ways and Means Committee to freeze Social Security wage taxes at the present 1 per cent, it is anticipated here the President will veto the Act. It is regarded as clever politics for the House Committee to support the industrial drive for a freeze, and for the White House to kill it. This would leave the decision to the next Congress, and the next Congress is expected to raise unemployment insurance standards, and possibly broaden old-age, health, and disability coverage. There seems little doubt the Social Security wage tax will go up to 2 per cent on January 1, the 2 per cent to be contributed by both employer and worker.

There also is word here that it is probable the number of employees permitted in a group of service trades may be sharply reduced by WMC, if the need for workers grows by reason of the calls for more ammunition, batteries, artillery, duck and twill, rockets, tanks, tires, tubes, electronic equipment, and similar materiel which the armed services insist are short in supply. Trades particularly mentioned at this time are beauty shops, barber shops, restaurants, and similar services. The type of industries and trades may be increased in number. The least essential will be tagged first.

Crude talc produced in Esmeralda County, Nevada, the highest quality of cosmetic talc in the United States, was placed under a dollar-and-cent price ceiling in November by OPA. The maximum price per ton f.o.b. Zurich, Nev., was set at $15.25, under Amendment 62, Order 1-A, MPR 188. OPA also increased the maximum importers may pay abroad for pure crude beeswax from Portuguese North Africa to 33¾ cents per pound, f.o.b. port of origin. The increase is 2½ cents per pound. Importers may increase their prices in this country 2½ cents per pound, raising the present 37½ cents to 40 cents per pound, f.o.b. U. S. port of arrival. The bergamot oil imported by USCC from Italy finally was priced by FEA at $5 per pound at the warehouse in New York. The 90,000 pounds brought from Italy is about half the Italian supply this year. The rest went to England and Russia. Distribution among producers in this country was pro-rated on the basis of quantities they han-

dled during the base period, 1936-1940. Beginning December 1, WFA has required importers of any substance classified as food, which includes a number of essential oils, to file a new customs entry form, WFO 63-1. This replaces form WPB-1040. Copies of the new forms may be obtained at customs offices, or by writing Director of Distribution, WFA, Washington, D. C., Ref: WFO 63. The Quartermaster of the Army has announced the shortage of spices has impelled him to reduce the use of some spices by more than one-half, and he has ordered others shall be removed from all menus. Nutmeg and cinnamon are no longer used. Outside of the United States the Army uses a substitute for cinnamon. WPB issued an amendment to the collapsible tube order requiring that tubes used for dentifrices may use tin not in excess of 3 per cent of tube weight. Pine oil, formerly controlled under M-365, now comes under Schedule 73 of M-300. The new arrangement requires that certified statements must be filed showing the proposed use of the oil, when the aggregate delivery per month exceeds 54 gallons. Lend-lease shipments in October included 6,400 pounds peppermint oil, 88,880 pounds citric acid, 89,231 pounds honey, and 1,800 pounds wormseed oil. OPA has announced there is no price ceiling on shaving equipment made of precious metals. But the equipment must be made wholly of the metal, not plated.

REPORT FROM BARBER EXPECTED

Lester A. Barber, of the Department of Commerce, sent to France jointly by the Department of Commerce and the State Department, left from Baltimore by air late in November. It is expected his earliest reports on the stock of essential oils to be found in the liberated countries of Europe, particularly in France, will arrive here late in December. Barber, who is Assistant Chief of the Drugs and Pharmaceutical Section of the Bureau of Foreign and Domestic Commerce, has been appointed as Specialist in the Auxiliary Service of the State Department. He has been accredited to the U. S. Embassy in Paris. It is his specific job to make a survey of the essential oil resources, and to make detailed reports of his findings to the State Department. These reports are expected to be available, through the Department of Commerce, to those who have valid reasons to receive them. Barber's appointment met with universal satisfaction among the constituents of the essential oils industry. He is exceptionally well equipped by training and experience for his task, he knows the languages of several European countries, has lived abroad, and knows the people and their habits, customs and commercial practices. He has both a technical approach and a business approach to the job by reason of wide experience. It is expected his work will form the basis of similar surveys and reports, of interest to other industries, which may be undertaken in the future by representatives of Government familiar with other industries. The proceeding follows the pattern which has been in effect for years. The Department of Commerce has long supplied the trained specialists who have functioned as Commercial Attaches of the Legations and Embassies main-

tained at various world's capitals by the State Department. Their task has been to obtain available data and to make these data useful to American industries in appropriate reports. They do not act as business agents for specific firms.

It is proposed the actual negotiations for procurement of limited or restricted materials, desired by the business interests of the various Allied Nations, shall be conducted by representatives of other agencies of the Government. An effort to crystallize such plans was made recently at a meeting in New York between members of the essential oils industry and officials of the FEA. The meeting was held under the auspices of the FEA Essential Oils Industry Advisory Committee. The broad plan appears to be that the members of the industry shall determine, from information that may be made available by means of the Barber report and other data, what materials they desire. It is not deemed advisable by the armed services at this time that representatives of private concerns should go abroad on missions to do private buying. The suggestion has therefore been made that the authenticated and approved representatives of FEA shall undertake the procurement missions, and shall carry on the negotiations, and conclude the transactions for the private concerns, and eventually shall supply the agreements which will enable the agencies charged with distribution of materials, to allocate whatever is available, and may be purchased, to the private concerns which are in the market for the merchandise which the Europeans may wish to sell. There are many details which must be worked out. Pending the time when peace enables the peoples of various countries to conduct business in a normal manner, it will probably be necessary for the several Governments to supervise and control the transactions as a semi-military activity. Apparently the fundamental negotiations must be conducted between representatives of the Governments whose people have merchandise to sell and the Governments of the people whose people wish to buy. The precise method by which this may be done must still be clarified. It is expected further developments will be reported early in January.

HORNEY AS PROCURING OFFICER

Three members of the essential oils industry have been designated to cooperate with the Government representatives. It is not believed at this time that the armed services will permit the representatives of private firms to journey to France as a buying mission. Apparently it will be necessary for FEA to send its own people, representing the USCC as a subordinate part of FEA. The word down here now is that it is possible Charles J. Horney of FEA will be chosen as the procurement officer. He knows the essential oils industry, knows Europe. Obviously, however, all suggestions and proposals are yet simply ideas. Their execution requires consultation and conferences between the agencies of the Government as well as with the various units of the industry.

The Treasury Department, in Washington, announced restrictions on commercial and business communications with liberated France had been lifted.

Selected Book List

COMMERCIAL METHODS OF ANALYSIS. By Foster Dee Small & Frank M. Buffen. Just published. This valuable book covers practical analysis of typical products and gives procedures and calculations for hundreds of determinations—plus many pointers on general approach to analysis of unknown samples. Special emphasis is laid on time-saving methods in line with economic standards of the efficient commercial laboratory. Of constant use as quick reference to experienced chemists—invaluable to new chemists. 753 pages. 152 illustrations . . . $6.00 postpaid.

THE LAW OF FOODS, DRUGS & COSMETICS. By Harry A. Toulmin, Jr., J. D., Litt. D., LL.D. With introduction by Hon. Paul V. McNutt, former Federal Security Administrator. All manufacturers need a copy of this book. A practical working manual. Contains official government regulations, FDA trade correspondence rulings, official forms and charts. Gives thorough analysis of the decisions relating to: False and Misleading Advertising, Unfair Competition and Misbranding, Informative Labeling. One large volume, 1460 pages . . . $17.50 postpaid (will be kept up-to-date with pocket supplements for modest additional charge).

HAIR-DYES & HAIR-DYEING. By H. Stanley Redgrove & J. Baru-Woollss. Completely revised edition of this standard work. The most complete treatise on subject yet written in any language . . . $5.00 postpaid.

THE COSMETIC FORMULARY. Vol. 1. By H. Bennett. The most comprehensive compilation of practical, commercial and experimental cosmetic manufacture. No theory. For chemist, manufacturer, student, experimenter. Hundreds of valuable formulae. Working methods and equipment. Sources of raw materials, giving trade names and rarer products . . . $3.80 postpaid.

PRACTICAL EMULSIONS. By H. Bennett. Gives proper understanding of the technique and formulation that is necessary to produce a good emulsion. Covers all types of emulsions . . . $5.00 postpaid.

THE CHEMISTRY & MANUFACTURE OF COSMETICS. By Maison G. de Navarre, Ph.C., B.S., consulting Chemist to the Drug and Cosmetic Industries, Member of the Faculty of Wayne University. A new kind of cosmetic book in which an expert gives you tested formulas and practical suggestions for making all up-to-date cosmetics—based on complete fundamental knowledge. Gives the basic properties, including standards and specifications, for all raw materials. Describes the proper equipment for every purpose and operation, showing you every step in its operation and use. Tells you how to comply with governmental regulations at every point. Includes a wealth of material found in no other book . . . Illustrated . . . 745 pages . . . $8.00 postpaid.

CONDENSED CHEMICAL DICTIONARY. 3rd Edition. Compiled and edited by Staff of the Chemical Engineering Catalog. 551 pages. Thumb index. A shortcut to specific information concerning 12,000 chemicals and raw materials. Designed for the practical use of all who are required to know the properties and industrial uses of chemical products . . . $12.00 postpaid.

COSMETIC DERMATOLOGY. By Herman Goodman. 54 chapters covering the field from acne to vitamins and hormones . . . $6.50 postpaid.

MODERN COSMETICS. By Francis Chilson. Modern manufacturing processes described. Uses of new materials indicated. Over 70 cosmetic products described, with formulas and manufacturing discussions. Valuable to chemist, factory manager, perfumer . . . $6.00 postpaid.

THE PREPARATION OF PERFUMES & COSMETICS. By J. P. Durvelle. Translated from 4th French edition by Ernest J. Parry. Partial contents: Natural Raw Materials Used in Perfumery; Synthetic Perfumes; Manufacture of Perfumed Products; Preparation of Aromatic Waters, Extracts, Infusions & Tinctures; Compound Extracts known as Bouquets; Toilet Waters; Cosmetics; Softening Cosmetics; Depilatories; Incense, Fumigators, Etc.; Toilet Soap & Various Products; Specialties; Fruit Ethers . . . 427 pages . . . $10.00 postpaid.

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Here and There Among Our Friends

▸ Joseph Revson has returned to assume his duties as general manager and treasurer of Revlon Products Corporation, New York, N. Y. Mr. Revson has received a medical discharge from the Army where he served for 29 months. He is well known throughout the cosmetic industry for his ability in this field, and for the unusual success his firm has enjoyed.

Joseph Revson

▸ William H. Campbell has been appointed Southeastern sales representative for Maurella Products, Inc., New York, N. Y., distributors of Essence Imperiale Russe, Ivar Shaving Preparations for Men, and Mastin's Eye Lifts. Mr. Campbell's territory will include the states of Virginia, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama and Tennessee. He will temporarily make his headquarters in Charlotte, N. C.

▸ Arthur G. Alter, for the past seven years merchandising manager of Revlon Products Corp., has assumed new duties as director of purchases for Houbigant Sales Corp., New York, N. Y. He is best known for his creative and merchandising ability. In his new role he will supervise the conception, creation and purchase of all packages, display material, etc., for the Houbigant and Chermay lines.

▸ A. A. Orlinger, patent counsel for Sharp & Dohme, Inc., Philadelphia, Pa., has been appointed chairman of the Patents and Trade Marks Committee of the American Drug Manufacturers Association. After taking his bachelor's degree from the College of the City of New York in 1919 he was offered a position as assistant in the chemistry department. He declined this when he was awarded the Hoffman scholarship by the Chemists Club of New York and enrolled in chemical engineering at the Massachusetts Institute of Technology. Succeeding scholarships were awarded to him and he was graduated with the degree of bachelor of science in chemical engineering. He was selected for the School of Chemical Engineering Practice and secured his master of science degree from M. I. T. in 1922. Then he engaged in chemical engineering work and consultation with the Henry Souther Engineering Co., the Central Dyestuff & Chemical Co. and the Grasselli Chemical Co. until 1928. In 1929 he was graduated from the Brooklyn Law School of St. Lawrence University with the degree of L.L.B. and was admitted to the New York bar in 1930. He then practiced patent law with particular emphasis on chemical patent matters in New York. Since 1937 he has been patent counsel for Sharp & Dohme.

▸ Arthur J. Hendricksen, Jr., son of Arthur J. Hendricksen, associated with the essential oil and cosmetic industries for many years who is now engaged in manufacturing protective ointments for Wallace & Tiernan, Belleville, N. J., has been commissioned an ensign. He was graduated from the Midshipmen's School at ceremonies conducted at the Cathedral of St. John the Divine late in October and since then has been at the Naval training center in Miami, Fla.

▸ Lt. Peter E. Davis, Coast Guard officer, recently returned after more than a year's duty on a transport, to his home at 5 Elizabeth Avenue, West Brighton, N. Y. Lt. Davis was in the first wave in the D-Day landing on the Normandy Coast, and described the action as very hard fought. He received his promotion to lieutenant, senior grade, while his boat was enroute on the invasion trip. He and his wife are both natives of Philadelphia, Pa. They came to Staten Island about seven years ago, after Lt. Davis was made assistant sales manager of the Ansbacher-Siegle Color Works, Rosebank, S. I. He was commissioned an ensign in the Coast Guard in September, 1942.

▸ William Bonyun, formerly sales manager of Daggett & Ramsdell, New York, N. Y., has been appointed vice-president and general manager of that company. In his new position he will not only continue to direct the sales and merchandising policies of Daggett & Ramsdell, but will also be responsible for its increasing manufacturing and product development activities. He has been active in the manufacture, sale and merchandising of cosmetics and toilet goods for over twenty years. In February, 1934, after eleven years of manufacturing and sales experience, he joined the Daggett & Ramsdell organization as their New York representative. He served in that capacity for two years, and was appointed sales manager in December, 1936.

▸ W. Kyle Sheffield, vice-president, New England Collapsible Tube Co., New London, Conn., is receiving the congratulations of friends on the arrival of his third grandchild, Peter Kyle Sheffield II, son of Capt. Peter Kyle Sheffield. The little fellow came into the world at Independence, Kan., November 2, weighing seven pounds five ounces. Capt. Sheffield, his father, is with the Army Air Force as Air Inspector in Kansas.

▸ David M. Kendall has been appointed general manager of Associated Distributors, Inc., Chicago, Ill. Mr. Kendall comes to Associated Distributors after ten years with E. R. Squibb and Sons, and Lentheric, Inc., New York, N. Y. In his new position, he will maintain headquarters at the home office of Associated Distributors in Chicago.

▸ John W. Anderson, president of The Anderson Co., Gary, Ind., was elected president of the American Fair Trade Council at the organization's annual meeting and Conference on Fair Trade Practices, held December 1, in the Hotel Roosevelt, New York, N. Y.

▸ Anne Fields, formerly connected with Germaine Monteil, is now assisting J. A. Reichart, president of Maria Danica Laboratories Corp., New York, N. Y., in special sales promotion. Currently she is active as special representative in the Eastern territory.

▸ Eugene P. Sullivan has disposed of his interest in the Dresden Cosmetic Co., New York, N. Y. Before engaging in any new association it is his intention to take a well earned vacation.

▸ Rosa Kroog was guest of honor at a testimonial dinner given for her by George Lueders & Co., New York, N. Y., at the Hotel Astor, on November, 10. Miss Kroog has been employed by the company for fifty years. She is now head of the invoicing department.

▸ C. J. Kern has been appointed chief chemist of the International Vitamin Corp., New York, N. Y. He was formerly associated with Washoff Products, Inc.; Kolynos Co. and R. H. Macy & Co.

▸ Eugene F. Bertrand has been appointed chairman of the Packaging Committee of the War Production Board's Forest Products Bureau. Mr. Bertrand, a sales manager of the Owens-Illinois Glass Co., Toledo, Ohio, is on loan to WPB.

▸ Leona Woodworth has just joined Sales Affiliates, Inc., New York, N. Y., as Specialist on Marinello. Her duties will be both technical and promotional. Her background of color-correlator and make-up designer in New York and Hollywood assures Marinello a completely modern style slant.

▸ Elaine Horton has joined the staff of Tone Laboratories, Inc., New York, N. Y., as director of promotion. She was previously with Prince Matchabelli, Inc., and before that with Ogilvie Sisters Sales Corporation.

▸ Arthur E. Tongue has been appointed manager of Anti-Freeze sales for U. S. Industrial Chemicals, Inc., New York, N. Y. He comes to them from the Chrysler Corp., where he was in charge of Advertising and Sales Promotion for the past eight years.

▸ William D. Maver, controller of the J. B. Williams Co., Glastonbury, Conn., has been elected to membership in the Controllers Institute of America. The Institute is a technical professional organization of controllers devoted to the improvement of controllership procedure.

▸ Herbert Kranich, founder and president of the Kranich Soap Co., Brooklyn, N. Y., who has been confined in the Brooklyn hospital for several weeks following an operation is reported to be well on the road to recovery.

▸ Robert Otte, son of Nat Otte, the popular secretary of the Drug, Cosmetic and Chemical Credit Men's Association, New York, N. Y., has been commissioned as an ensign. He is engaged in the Philippine campaign as a gunnery officer. William, another son, is also in the navy.

▸ George B. Schwab has been elected treasurer and director of the Heyden Chemical Corporation, New York, N. Y. For the past seven years Mr. Schwab has served as treasurer and director of the Aspinook Corp., Jewett City, Conn.

▸ Paul H. Lelong, head of the importing house of E. Lelong, announces the removal of the company's offices and laboratories to new and larger quarters at 24-16 Bridge Plaza, Long Island City, N. Y.

▸ Abe Plough, founder and president of Plough, Inc., Memphis, Tenn., has been appointed a member of the Memphis Park Commission.

▸ E. Leonard Koppel, package designer, has opened his new studio at 40 E. 49th St., New York, N. Y.

▸ R. M. Stevenson, sales manager of Givaudan Delawanna, Inc., New York, N. Y., basing his opinion on available reports, states that Paris seems to maintain its position in the perfumery business in spite of the war. During the years of the German occupation of Paris and France as a whole, the industry did not suffer materially. The invaders did their best to keep Paris ostensibly gay and to keep the perfumery business at approximately the pre-war level.

The French domestic essential oil industry has been supplying Paris with whatever raw materials could be produced. Presumably those synthetic aromatic chemicals not derived from unobtainable essential oils, have also been available; perhaps they have been produced in France, or imported from Germany.

However raw materials were obtained, the French perfumery position seems to have maintained its position to a large extent and the former severe competition of French products in American markets is likely to be resumed early in the post-war period.

▸ Robert E. Tyriver has been made general sales manager of the Manhattan Soap Co., New York, N. Y.

▸ John J. Fenlon has just become the New York representative for Associated Distributors, Inc., Chicago, Ill.

Books of the Industry

CUMULATIVE INDEX FOR VOLUMES I, II, III, IV, V AND VI OF THE CHEMICAL FORMULARY. H. Bennett. 164 pages. Chemical Publishing Co., Inc., Brooklyn, N. Y. Price $4.00.

This comprehensive index, covering all the formulae included in the complete six volumes of The Chemical Formulary, will help you find what you want when you need it. It indicates at a glance the volume and page number for each item you want.

The material has been arranged in strict alphabetical order to facilitate quick reference. Numerous cross references will lead the user to all possible subjects relating to formulae or processes of interest.

USES AND APPLICATIONS OF CHEMICALS AND RELATED MATERIALS. Thomas C. Gregory. 459 pages. Volume II. Not illustrated. Reinhold Publishing Co., New York, N. Y. Price $9.00.

This volume sets forth the classified applications of chemicals and related materials in converting, compounding and processing industries. It supplements and complements Volume I, and covers a number of chemicals and materials not treated in that volume.

An index of synonyms and cross references is included, as well as an index of patents, and the addresses of the owners of patents listed.

NEWS and EVENTS

Thomas Delehanty Tells N. Y. U. Students About Export Opportunities

Thomas W. Delehanty of the Department of Commerce, Washington, D. C., was the lecturer at the December 4 meeting of the class on marketing of drug and cosmetic products conducted at New York University by Prof. Louis Bader and Sidney Picker. He discussed with clarity and informative information the steps that should be taken to develop export trade, who might profitably undertake it and the help that is available from the Department of Commerce. Following the lecture, which was illustrated by numerous charts, Mr. Delehanty answered questions.

Special guests of Prof. Bader and Mr. Picker who attended the lecture enjoyed a dinner at the Faculty Club prior to the lecture. The guests were: John Stebe, Miss Stebe, Dr. Bockelman, Mrs. Sidney Picker, Mrs. Louis Bader, Stephen Mayham, Elliot D. Odell, Dan Rennick, W. Lambert and Harland J. Wright.

The course which covers the production, manufacturing and marketing problems of the drug and cosmetic industry from the standpoint of the student interested in sales was introduced this Autumn and attracted 52 students. On account of the success of the course it will be repeated starting the first Monday in February.

Walter Conklin named by Acclamation as President of Foragers

In recognition of his able and conscientious administration of the Foragers of America in the past year, Walter A. Conklin has been renominated as president by acclamation. Other officers named by the association are: vice-president, Richard R. Powell; secretary-treasurer, Arthur J. Connolly. Members named for the Board of Governors are: W. W. Neilson, Robert McGilvray, L. S. Huntington, Victor H. Fredholm, John A. Curry and Oscar H. Betz.

Arthur J. Connolly

Walter A. Conklin

The annual meeting of the Foragers will be held in the association quarters in the Midston House, New York, N. Y., December 28 and the annual party will be held on the evening of January 5.

Extension of Alcohol Bonus Expected

There are indications that the bonus of 25 per cent now in force on alcohol will be extended into the new year.

Associate Members of the Calif. Cosmetic Assn. Meeting

A meeting of the Associate Members of the California Cosmetic Association was held at luncheon at Lindy's, in Los Angeles, Calif., on October 31, 1944. Leonard Katz, vice-president of Florasynth Laboratories, Inc., and chairman of the Association, presided at the luncheon-meeting. Mr. Katz makes his headquarters in the Los Angeles office.

Problems of the cosmetic industry that have a direct bearing on the industries represented in the associate membership were discussed with an eye to future operations.

Compagnie Duval in New Quarters

Compagnie Duval, division of S. B. Penick & Co., has moved to 50 Church St., New York, N. Y. Increased facilities will enable them to more fully serve their many friends.

Fritzsche Brothers Reorganize Executive Personnel

Following the death in October of Mr. George L. Ringel, a director and vice-president of Fritzsche Brothers, Inc., New York, N. Y., realignment of the executive personnel of that company has been made.

John H. Montgomery, secretary and director, has been elected second vice-president, retaining also his former office.

F. H. Leonhardt

Hans P. Wesemann, third vice-president, has been made a director, and Joseph A. Huisking, fifth vice-president, has been elected treasurer and managing director of the company's affiliate, Fritzsche Brothers of Canada, Ltd., with offices and plant in Toronto.

A new position has been created, that of chief chemist, and Dr. Ernest Guenther, fourth vice-president, has been appointed to that post.

The present officers of Fritzsche Brothers, Inc., are as follows:

F. H. Leonhardt	President
Wm. A. R. Welcke	First Vice-President & Treasurer
John H. Montgomery	Second Vice-President & Secretary
Hans P. Wesemann	Third Vice-President
Dr. Ernest Guenther	Fourth Vice-President
Joseph A. Huisking	Fifth Vice-President
R. R. Redanz	Assistant Treasurer

The first four named officers, with Dr. A. Nicolaus, managing director of the Clifton, N. J., factory, constitute the Board of Directors.

Crude Vegetable Oil Order Lifted

War Food Order No. 29 has been eased to permit the delivery of crude cottonseed, peanut, soybean and corn oil during the period ending March 31, 1945.

Initial Offering of Response Perfume by Chalette in Philadelphia

Chalette Parfums which was organized in the Spring of this year by Miss Madelaine Chalette, an experienced European perfumer, and her father, Leon Chalette, has been making steady progress and its initial offering of Response perfume in three popular sizes has been made in time for the Christmas trade.

Offices of the company are located at 45 West 57th Street, New York 19, N. Y. The package is distinctive and original and the perfume is offered in one dram, one-half ounce and one ounce sizes to retail respectively at $3.75, $12.00 and $22.50.

The perfume has a rose base and a spicy character, and the quality is considered distinctive and outstanding. The perfume was introduced in Philadelphia by Bonwit Teller & Co., November 26.

Miss Chalette's experience goes back to Europe where she manufactured perfumes prior to the war. In 1940 she and her father left Europe for China and there started the manufacture of perfumes for export to the Far East. Shortly before the war, in October, 1941, they left China on the President Coolidge—the last boat to leave the Far East for the United States. Curiously enough they also previously left Italy for the Far East on the last boat to leave Europe. Both vessels were ultimately sunk.

T.G.A. Announces Convention Date for 1945

The Toilet Goods Association has announced that the 1945 convention will be held at the Waldorf-Astoria, New York, N. Y., next May 9, 10 and 11.

The first day of the convention will be devoted entirely to a meeting of the Scientific Section. The general convention program will be carried out the following two days.

A committee to handle details pertaining to the meeting has been appointed. It consists of: L. R. Root, chairman; A. C. Burgund; Charles Fischbeck; P. E. Haeber; W. E. Klaas; M. Lemmermeyer; M. F. Martin; W. P. Murray; Karl Voss and J. Blaine Walker.

Members are urged not to attempt to make reservations for rooms in the hotel until a later date.

Alcohol Allocation Plan SCHM

Ethyl alcohol is to be taken from under Order M-30, on December 31, 1944, and placed under M-300, Schedule 71. The small order exemption is 54 gallons per month, the allocation period is the calendar month. Users of over 55 gallons must file end use certificates with orders.

Users of 3500 gallons per month or more must file applications using Form WPB-2945, by the 5th of the preceding month. Cosmetics and toilet goods manufacturers are placed under group B.

Distillers Get Another Holiday

J. A. Krug, chairman of the War Production Board has announced a holiday for distillers for January. The holiday will be for the one-month period and distillers will return to the production of commercial alcohol in February. Mr. Krug did not specify that any of the alcohol thus made available would be allocated to the cosmetic industry.

Kleerskin, Inc., Launches Clin in New York—New Line to Follow

Kleerskin, Inc., 730 Fifth Avenue, New York, N. Y., has recently launched Clin, a double-purpose beauty mask which, it is stated, is made from a Dutch formula, from a seaweed base without waxes. It is now being distributed through department and drug stores in the New York market. The three-ounce jar retails for $2.50 and the one-ounce jar for $1.00. National distribution is being secured and as soon as outlets throughout the country are established, the company will introduce its "Salon 40" line consisting of cleansing cream, overnight cream, special cream, skin lotion, powder base and rouge. An attractive black plastic jar with gold lettering and decoration has been selected and the motif is carried out in the packaging of all of the "Salon 40" products.

Theodore M. Nelson, secretary and treasurer of the company, is directing the business and also the salon which is operated at 40 E. 50th Street, New York. He is impressed with the opportunity ahead of the cosmetic industry. "During the war," says Mr. Nelson, "many more women have been educated to use cosmetics, and many of these cosmetics are the answer to a war-created need for rapid, effective products at sensible prices. And with the government doing much to put money into the hands of the middle classes who constitute the bulk of the market for toiletries, there will be an ever-growing demand for such products."

Revlon Opens New Pacific Coast Office and Show Rooms

Revlon, New York, N. Y., has opened new offices and show rooms on the Pacific Coast as a convenience and for better service to its retail outlets there. The showrooms are simply but attractively decorated in true California style. The new offices are located in Los Angeles. Thomas G. Bradley, sales manager, is in complete charge of all retail operations.

Yellow Iron Oxide Restricted

Limitation Order M-383 has been issued to restrict yellow iron oxide to preferred orders for delivery to various government agencies.

Chicago Allied Drug & Cosmetic Assn. Postpone Christmas Party

Due to the inability of the Book Cadillac Hotel to serve a dinner on the occasion of the Christmas Party of the Allied Drug and Cosmetic Association, the party has been postponed until a future date. The affair has not been cancelled. The new date will be announced.

Flavoring Extract Manufacturers' Assn. Announce Convention Date

The thirty-sixth annual meeting of the Flavoring Extract Manufacturers' Assn. will be held at the Hotel Drake, Chicago, Ill., on June 4 and 5, 1945. The executive and advisory committee will meet on Sunday, June 3. Further details in regard to the program will be announced later.

Fats and Oils in Soaps Restricted

War Food Order 42b, Amendment 1, stipulates that no manufacturer shall use lard or rendered fat in the manufacture of soap unless the lard or rendered pork fat was purchased prior to November 13, 1944.

Pine Oil Allocation

Pine oil has been placed under Order M-300, Appendix B. The small order exception is 54 gallons per month, and the allocation period is the calendar month. Orders of more than this quantity must be accompanied with end use certificates.

Cosmetic Credit Men to Hold Winter Party January 18

The annual Winter party of the Drug, Cosmetic & Chemical Credit Men's Association will be held on the evening of January 18 at the Hotel George Washington, New York, N. Y.

The affair will open with a cocktail party at 6 p. m., to be followed by the dinner, entertainment of a high order, and dancing. The Red Coats from Rogers Corner who made such a hit at the last party will again be on hand with singing and dancing music from 8 to 10.30 p. m. The affair is being arranged by Nat Otte, Edward Maloney, Louis Candee and Charles Noble.

New officers of the group, elected at the last meeting are: Chairman, E. P. Utter; vice chairman, Joseph C. Lynch; Treasurer, G. Wohlfort; Secretary, Nat Otte; Assistant Secretary, E. F. Maloney.

TGA Membership Committee Meeting

A luncheon meeting of the membership committee of the Toilet Goods Assn. was held at the Biltmore Hotel, New York, N. Y., on November 29. Ways were discussed of increasing the association's membership to 500 by January 1. The present enrollment is just short of that goal.

Acetate Moulding Powder Allocation

Cellulose acetate and cellulose acetate butyrate moulding powder have been placed under Order M-300, Appendix B. The small order exemption is 100 pounds per person per month, and the allocation period is the calendar month. This amount is in addition to powder received for experimental purposes, or for powder covered by other allocations. Orders of more than 100 pounds must be accompanied with end use certificates.

Butyl Alcohol and Butyl Acetate Allocation

Butyl alcohol and butyl acetate have been placed under General Allocation Order M-300. The small exemption order is 54 gallons, and the allocation period is the calendar month.

Methyl Ethyl Ketone Allocation

Methyl ethyl ketone has been placed under Allocation Order M-300. The small order exemption is 54 gallons, and the allocation period is the calendar month.

Gaston de Paris Expanding Under New Management

Gaston de Paris, 665 Fifth Ave., New York, N. Y., which came under new management last Summer when Charles Pearsall sold his entire holdings in it, has been making such creditable progress under the direction of Arthur Learey that new and larger laboratories will shortly be established.

BIMS of New York Winter Dinner at Hotel Lafayette January 25

A gala occasion is promised all who attend the Winter dinner of the BIMS of New York at the Hotel Lafayette on the evening of January 25. As usual there will be no speakers and the evening will be devoted to entertainment such as those who have attended previous dinners appreciate. The event will be purely social in nature.

In view of the demand for accommodations the association is particularly fortunate in securing the Hotel Lafayette, where previous dinners have been held, for the occasion. It is the only society that has been able to secure such accommodations. This was made possible by the popular chairman, Martin F. Schultes, who made the arrangements.

Christmas Perfumes Plentiful

Javier Serra, owner of Dana Perfumes, recently arrived here from Buenos Aires, Argentina. He reports that perfumes will be plentiful for this Christmas, but the outlook for next Christmas is not so rosy. He stated that the war has caused a shortage in perfumes, and that counterfeiting is on the increase. He does not expect full production of perfumes until at least a year after the War's end.

Obituary

Frederick C. Theile

Frederick C. Theile, president of P. R. Dreyer, Inc., New York, N. Y., died December 3 in the Englewood hospital following a relapse from his long illness of several years.

F. C. Theile

Mr. Theile was graduated from Rutgers University with the degree of PhG. and was a veteran of World War I. In the early twenties he was vice-president of the Charles Sparhawk Co. In 1924 he joined P. R. Dreyer, Inc., as vice-president and after the death of Peter R. Dreyer in 1932 became president of the company.

His widow, Mrs. Anna H. Woelken Theile, and two sons, Frederick and Kenneth, survive him.

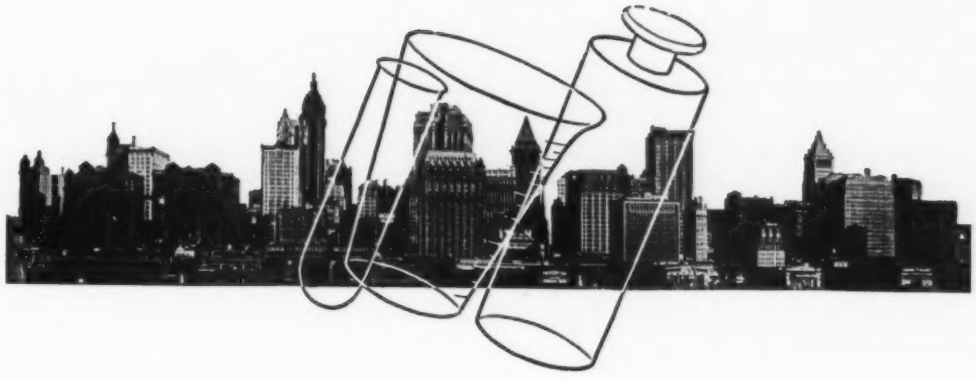
Mr. Theile was well known throughout the essential oil industry and was highly respected for his intimate knowledge of the business, his spirit of helpfulness and his interest in the welfare of his associates.

Edwin A. Sager

Edwin A. Sager, who was formerly export manager for Colgate-Palmolive-Peet Co., Newark, N. J., died November 27, at Oceanside, L. I.

Lt. William George Geary

The death of Lt. William George Geary, former regional vice-president, in charge of McKesson & Robbins' South Atlantic District, has been announced. Lt. Geary, who had been commissioned by the Navy, died November 27. Before his entry into the Navy his headquarters were located at Atlanta, Ga. He is survived by his widow, Mrs. Doris Geary, his daughter, Charlotte, and his mother, Mrs. W. F. Geary.



Market Shows Unusual Price Developments

ALTHOUGH trade in various raw materials was not especially active over the past month, price developments proved highly interesting. Animal fixatives which have remained steady over a long period, showed signs of weakening. Ambergris was reduced for the first time in many months, and because of a reasonably good spot supply, more favorable prices were quoted on civit.

According to latest estimates, glycerine producers will end the year with good stocks on hand. About a hundred million pounds will be on hand December 31, 1944, it is believed. Further sales have been reported by the Commodity Credit Corporation, thus reducing stocks held by the agency to well below 2,000,000 pounds. It is still too early to make any predictions as to how much glycerine will be required for lend-lease over the coming quarter, but in view of the large quantities taken in the last half of this year, it is believed additional purchases will be noted.

VANILLA BEANS FROM MADAGASCAR

By this time some eighty tons of vanilla beans have perhaps arrived here from Madagascar, and it is understood that an additional quantity, about sixty tons, will be shipped from Durbin for the United States within the next week or ten days. The eighty tons which have arrived is said to have a total value of a million dollars. For some time past, local houses have endeavored to obtain information as regards to unsold stocks and the available supply in Madagascar only to be advised that such information would be available only through official channels. It was never possible, however, to obtain detailed reports through official channels.

One major shipper in Madagascar has volunteered the following data with regard to the position of the market in the primary center. The 1944-45 production of vanilla beans in Madagascar is expected to amount to about 150 tons. Sellers in the primary center are not pressing for business in the light of a short crop and overtures from the French market. Stocks in Madagascar from previous carryovers are estimated at 200 to 250 tons which consist largely of the lower qualities. For all practical purposes, the report concludes, all of the better grades of beans have long since been sold.

Advices from Mexico state that curers are paying exceedingly high prices for new crop green vanilla beans. In fact the prices are above the levels at which dealers in this country are permitted to sell under OPA ceilings. Because the coming crop of Mexican vanilla beans is only about half of what it was last year, there is a general feeling among the natives and curers in Mexico that buyers in the United States will eventually be forced to pay the higher prices for them.

Among the oils, a consumer's price was established on bergamot to be delivered out of the dealers' quotas assigned them from the 90,000 pounds of oil recently imported from Italy. The total quantity which arrived in the United States was about 50 per cent of the Italian supply, the remainder going to Russia and Great Britain. The consumer's price named by local dealers was $6.25 to $7 per pound, compared with the recent nominal price of $25 per pound. Dealers were rather slow in quoting prices having in mind possible action by OPA. The domestic consumer's prices were finally quoted after the Foreign Economic Administration set $5 per pound, ex warehouse, as its price for sales to dealers. Some clove oil is offered here at fairly attractive prices for January-February arrival, but major distillers have little material to offer for immediate delivery. Sandalwood, peppermint, patchouli and lemon are all scarce and firm.

Fresh arrivals of lemongrass tended to ease the spot position and local dealers seemed a little more anxious to move coriander, spike lavender, geranium and rosemary.

No early resumption of cocoanut oil and copra importations from the Philippine Islands is expected by trade observers here who explain that such a movement probably will not be witnessed until the entire archipelago is won. Main crushing plants for the entire Philippines are located on Luzon Island in territory largely occupied by the Japanese and it is expected that the Japs will probably destroy these plants as they are pushed back.

PRICES IN THE NEW YORK MARKET

(Quotations on these pages are those made by local dealers, but are subject to revision without notice)

ESSENTIAL OILS

Almond Bit, per lb.	3.50@	4.00
F. P. A.	4.75@	5.10
Sweet True	1.25@	1.75
Apricot Kernel	.56	Nom'l
Amber, rectified	2.25	Nom'l
Angelica Root	125.00@	150.00
Anise, U. S. P.	4.00	Nom'l
Imitation	1.75@	2.10
Aspic (spike) Span.	3.75@	4.00
Avocado	1.05@	1.25
Bay	1.45@	1.70
Bergamot	6.25@	7.00
Artificial	4.00@	9.25
Birch, sweet	3.00@	5.00
Birchtar, crude	2.25	Nom'l
Birchtar, rectified	4.25	Nom'l
Bois de Rose	4.75@	5.10
Cade, U. S. P.	1.00@	1.25
Cajeput	2.35@	3.00
Calamus	22.50@	35.00
Camphor "white," dom.	.35@	.45
Cananga, native	12.00@	13.00
Rectified	14.00@	16.25
Caraway	18.00@	20.00
Cardamon	28.00@	32.00
Cassia, rectified, U. S. P.	12.00	Nom'l
Imitation	3.75@	
Cedar leaf	1.35@	1.60
U. S. P.	2.65@	3.34
Cedar wood	1.00@	1.10
Celery	20.00@	24.00
Chamomile	150.00	Nom'l
Cinnamon	15.00@	18.75
Citronella, Ceylon	1.00@	1.10
Java	3.25	Nom'l
Cloves, Zanzibar	1.80	Nom'l
Copaiba	.85	Nom'l
Coriander	30.00@	32.00
Imitation	12.00@	14.00
Croton	3.50@	4.00
Cubebs	5.25	Nom'l
Cumin	8.50@	11.00
Dillseed	6.85	Nom'l
Erigeron	2.25@	5.00
Eucalyptus	1.55	Nom'l
Fennel, Sweet	4.00	Nom'l
Geranium, Rose, Algerian	12.50@	15.00
Bourbon	10.00@	13.00
Turkish	5.00@	5.80
Ginger	21.00@	22.00
Guaiac (Wood)	4.00@	4.80
Hemlock	2.65@	3.34
Substitute	.55@	.60
Juniper Berries	12.50@	16.00
Juniper Wood, imitation	.75@	.80
Laurel	5.00	Nom'l
Lavandin	8.25	Nom'l
Lavender, French	9.00@	12.00
Lemon, Calif.	3.25	Nom'l
Lemongrass	1.55@	1.75
Limes, distilled	7.00@	7.75
Expressed	13.50@	15.00
Linaloe	3.65@	4.00
Lovage	95.00	Nom'l
Marjoram	7.25@	7.50
Neroli, Bigarde P.	300.00@	375.00
Petale, extra	275.00@	340.00
Olibanum	5.00@	5.75
Opopanax	25.00@	38.00
Orange, bitter	4.00@	4.25
Brazilian	1.25@	1.40
Calif., exp.	1.75@	
Orris Root, abs. (oz.)	135.00@	
Artificial	36.00@	40.00
Pennyroyal, Amer.	4.00@	4.10
European	4.00	Nom'l
Peppermint, natural	7.50@	
Redistilled	8.05@	
Petitgrain	1.65@	2.00
Pimento	6.25@	8.00
Pinus Sylvestris	4.25@	5.00
Pumillonis	4.25	Nom'l
Rose, Bulgaria (oz.)	30.00@	40.00
Synthetic, lb.	45.00@	55.00
Rosemary, Spanish	1.65@	1.80
Sage	4.85@	5.25
Sage, Clary	35.00	Nom'l
Sandalwood, East India	7.00	Nom'l
Sassafras, natural	2.00@	2.15
Artificial	1.00@	1.50
Snake root	12.00	Nom'l
Spearmint	4.00	Nom'l
Thyme, red	2.60@	3.25
White	3.25@	5.00
Valarian	40.00	Nom'l
Vetivert, Java	50.00	Nom'l
Bourbon	35.00@	38.00
Wintergreen	4.85@	8.50
Wormseed	5.25	Nom'l
Ylang Ylang, Manila	38.00	Nom'l
Bourbon	9.50@	12.00
Bay	2.75@	3.00

(Continued on page 101)

INDEX TO ADVERTISERS

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TERPENELESS OILS

Bergamot	49.00	Nom'l
Grapefruit	65.00@	
Lavender	28.00	Nom'l
Lemon	40.00@	55.00
Lime, ex.	80.00@	100.00
Distilled	60.00@	67.00
Orange sweet	57.00@	100.00
Peppermint	13.35@	14.00
Petitgrain	3.75@	4.00
Spearmint	5.00@	6.00

DERIVATIVES AND CHEMICALS

Acetaldehyde 50%	1.90@	2.75
Acetaphenone	1.60@	1.75
Alcohol C 8	7.50	Nom'l
C 9	14.00	Nom'l
C 10	7.75@	12.00
C 11	11.50	Nom'l
C 12	7.20@	8.50
Aldehyde C 8	22.50@	28.00
C 9	32.00	Nom'l
C 10	22.00@	29.00
C 11	22.00	Nom'l
C 12	25.00@	30.00
C 14 (so called)	9.25@	9.75
C 16 (so called)	7.65@	8.25
Amyl Acetate	.50@	.75
Amyl Butyrate	.90@	1.10
Amyl Cinnamate	4.50@	5.80
Amyl Cinnamate Aldehyde	2.75@	5.00
Amyl Formate	1.25@	1.75
Amyl Phenyl Acetate	3.75@	4.00
Amyl Salicylate	.80@	.95
Amyl Valerate	2.10@	2.75
Anethol	3.00@	3.50
Anisic Aldehyde	3.15@	4.00
Benzophenone	1.15@	1.30
Benzyl Acetate	.65@	1.00
Benzyl Alcohol	1.85@	2.10
Benzyl Benzoate	1.10	Nom'l
Benzyl Butyrate	2.25@	3.00
Benzyl Cinnamate	5.15	Nom'l
Benzyl Formate	2.75@	3.00
Benzyl-Iso-eugenol	10.25	Nom'l
Benzylidenacetone	2.25@	3.40
Borneol	1.80	Nom'l
Bornyl Acetate	2.00	Nom'l
Bromstyrol	5.00	Nom'l
Butyl Acetate	.11@	14½
Cinnamic Acid	3.75@	4.50
Cinnamic Alcohol	3.85@	4.25
Cinnamic Aldehyde	1.75	Nom'l
Cinnamyl Acetate	10.40@	12.00
Cinnamyl Butyrate	12.00@	14.00
Cinnamyl Formate	10.00@	13.00
Citral, C. P.	3.80@	4.00
Citronellol	6.50@	7.00
Citronellyl Acetate	8.60@	9.20
Coumarin	3.00@	3.50
Cuminic Aldehyde	8.00@	11.25
Diethylphthalate	.24	Nom'l
Dimethyl Anthranilate	4.55@	5.00
Ethyl Acetate	.25	Nom'l
Ethyl Anthranilate	5.50@	7.00
Ethyl Benzoate	.90@	1.15
Ethyl Butyrate	.75@	.90
Ethyl Cinnamate	3.25@	3.75
Ethyl Formate	.80@	1.00
Ethyl Propionate	.80	Nom'l
Ethyl Salicylate	.90@	1.00
Ethyl Vanillin	5.25@	6.00
Eucalyptol	2.85	Nom'l
Eugenol	3.00@	3.25
Geraniol, dom.	5.50@	6.00
Geranyl Acetate	4.00	Nom'l
Geranyl Butyrate	8.20@	8.50
Geranyl Formate	9.25@	10.00
Heliotropin, dom.	6.00	Nom'l
Hydrotopic Aldehyde	15.00@	18.00
Hydroxycitronellal	7.75@	10.00
Indol, C. P.	23.00@	26.50
Iso-borneol	1.00@	1.10
Iso-butyl Acetate	1.25@	2.00
Iso-butyl Benzoate	1.50@	2.60
Iso-butyl Salicylate	2.70@	3.00
Iso-eugenol	4.00@	4.85
Iso-safrol	3.00	Nom'l
Linalool	7.00@	7.85
Linalyl Acetate 90%	7.00@	8.75
Linalyl Anthranilate	15.00@	
Linalyl Benzoate	10.50@	
Linalyl Formate	9.25@	12.00
Menthol, Brazilian	13.75@	14.50
Methyl Acetophenone	1.80	Nom'l
Methyl Anthranilate	2.75@	3.00
Methyl Benzoate	.70@	1.10
Methyl Cellulose, f.o.b. shipping point	.60	Nom'l
Methyl Cinnamate	2.50@	3.75
Methyl Eugenol	3.50@	6.75
Methyl Heptenone	3.50	Nom'l
Methyl Heptine Carbonate	40.00@	60.00
Methyl Iso-eugenol	5.85@	10.00
Methyl Octine Carbonate	24.00@	30.00
Methyl Paracresol	2.50	Nom'l
Methyl Phenylacetate	3.75@	4.00
Methyl Salicylate	.35@	.38
Musk Ambrette	4.25@	4.50
Ketone	4.35@	4.80
Xylene	1.65@	2.50
Neroline (ethyl ether)	2.00@	3.15
Paracresol Acetate	2.55@	3.00
Paracresol Methyl Ether	2.60	Nom'l
Paracresol Phenyl-acetate	6.50@	8.50
Phenylacetaldehyde 50%	3.00@	3.35
100%	4.50@	5.00
Phenylacetic Acid	3.00@	3.75
Phenylethyl Acetate	2.50@	4.10
Phenylethyl Alcohol	2.40@	3.00

(Continued on page 103)

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Phenyl Formate	12.25@	
Phenyl Valerianate	16.00@	17.50
Phenylpropyl Acetate	8.00@	10.00
Santalyl Acetate	20.00@	22.50
Scatol, C. P. (oz.)	5.35@	6.00
Styrolyl Acetate	2.50@	3.00
Styrolyl Alcohol	9.25@	12.00
Vanillin (clove oil)	2.60	Nom'l
(guaiacol)	2.35	Nom'l
Lignin	2.35	Nom'l
Vetivert Acetate	25.00	Nom'l
Violet Ketone Alpha	18.00	Nom'l
Beta	15.00	Nom'l
Methyl	6.50	Nom'l
Yara Yara (methyl ester)	2.00@	3.10

BEANS

Tonka Beans, Surinam	.70@	.95
Angostura	2.00@	2.50
Vanilla Beans		
Mexican, whole	11.00@	
Mexican, cut	10.00@	
Bourbon	9.50@	10.50
Tahiti	4.00@	

SUNDRIES AND DRUGS

Acetone	.8½@	.09
Almond meal	.25@	.35
Ambergris, ounce	12.00@	16.00
Balsam, Copaiba	.60@	.75
Peru	1.15@	1.50
Beeswax, bleached, pure		
U. S. P.	.58	Nom'l
Yellow, refined	.53½	Nom'l
Bismuth, subnitrate	1.20@	1.22
Borax, crystals, carlot ton	55.50@	58.00
Boric Acid, U. S. P., cwt.	6.95@	7.55
Calamine	.18@	.20
Calcium, phosphate	.08@	.08¾
Phosphate, tri-basic	.09@	.10
Camphor, domestic	.69@	.84
Castoreum	13.00@	17.00
Cetyl Alcohol	1.75	Nom'l
Pure	2.25	Nom'l
Chalk, precip.	.03½@	.06½
Cherry Laurel Water, jug, gal.	3.60@	4.00
Citric Acid	.21	Nom'l
Civet, ounce	18.00@	25.00
Clay, colloidal	.07@	.15
Cocoa, Butter, lump	.25½@	.27
Cyclohexanol (Hexalin)	.30@	.50
Fuller's Earth, ton	15.00@	33.00
Glycerin, C. P., drums	.15½@	.15¾
Gum Arabic, white	.42@	.45
Amber	.11¾@	.12½
Powdered, U.S.P.	.18@	.21
Gum Benzoin, Siam	5.00	Nom'l
Sumatra	1.40	Nom'l
Gum Galbanum	1.80@	2.00
Gum Myrrh	.50@	.55
Henna, pwd.	.30@	.35
Kaolin	.05@	.07
Labdanum	3.25@	5.00
Lanolin, hydrous	.30@	.34
Anhydrous	.31@	.35
Magnesium, carbonate	.09@	.10¾
Stearate	.24@	.27
Musk, ounce	50.00	Nom'l
Olibanum, tears	.18@	.35
Siftings	.11½@	.13
Orange Flower Water, gal.	1.75@	2.25
Orris Root, African, pwd.	1.10@	1.15
Paraffin	.06¼@	.09
Peroxide	1.10@	1.75
Petrolatum, white	.06¼@	.08½
Quince Seed	1.65@	1.95
Rice Starch	.10	Nom'l
Rose Leaves, red	3.45@	4.00
Rose Water, gal.	6.50@	8.00
Rosin, M. per cwt.	6.77@	
Salicylic Acid	.35@	.40
Saponin	2.00@	2.50
Silicate, 40°, drums, works, 100 pounds	.80@	1.20
Soap, neutral, white	.20@	.25
Sodium Carb. 58% light, 100 pounds	1.35@	2.35
Hydroxide, 76% solid, 100 pounds	2.60@	3.75
Spermaceti	.26@	.27
Stearate Zinc	.30@	.31
Styrax	1.40@	1.60
Tartaric Acid	.64	Nom'l
Tragacanth, No. 1	4.35@	4.80
Triethanolamine	.34½	Nom'l
Violet Flowers	1.75@	2.00
Zinc Oxide, U. S. P. bbls.	.10½	.10¾

OILS AND FATS

Castor No. 1, tanks	.13@	
Cocoanut, Manila Grade, c.i.f., tanks	.0835@	
Corn, crude, Midwest, mill, tanks	.12¾@	
Corn Oil, distilled, drums	.16¼@	.16½
Cotton, crude, Southeast, tanks	.12¾@	
Grease, white	.08⅞@	
Lard	.1522½@	
Lard Oil, common, No. 1 bbls.	.14@	
Palm, Niger, drums	.0865	
Peanut, blchd., tanks	.1501@	
Red Oil, distilled, tanks	.12@	
Stearic Acid		
Triple Pressed	.18⅝@	.18⅞
Double Pressed	.15⅞@	.16⅞
Tallow, acidless, barrels	.14¼@	
Tallow, N. Y. C., extra	.08⅝@	
Whale oil, refined	.1232	Nom'l

Production Control and the Analysis of Cosmetics

by MAISON G. DENAVARRE, Ph.C., B.S.

Technical Editor of the American Perfumer & Essential Oil Review; Expert Consultant, Engineer Board, U. S. Army; Special Lecturer in Cosmetics, Wayne University, College of Pharmacy; Consulting Chemist

Tenth Installment

The ninth installment was published in the preceding issue. Subsequent installments will appear in forthcoming issues.

ACKNOWLEDGMENTS

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CHAPTER IV
(continued)

Physical and Chemical Testing Gravimetric and Volumetric Methods

C-5—TEST SOLUTIONS (T.S.)

Alkaline Cupric Tartrate Test Solution
[Fehling's Solution]—(U.S.P.)

A—*The Copper Solution*—Dissolve 34.66 Gm of carefully selected, small crystals of cupric sulfate, showing no trace of efflorescence or of adhering moisture, in sufficient distilled water to make 500 cc. Keep this solution in small, well-stoppered bottles.

B—*The Alkaline Tartrate Solution*—Dissolve 173 Gm of crystallized potassium and sodium tartrate and 50 Gm of sodium hydroxide in sufficient distilled water to make 500 cc. Keep the solution in small, rubber-stoppered bottles.

For use, mix exactly equal volumes of the two solutions at the time required.

AMMONIA TEST SOLUTION (U.S.P.)—It contains not less than 9.5 percent and not more than 10.5 percent of NH_3. It is prepared by diluting 395 cc of stronger reagent ammonia water, with sufficient distilled water to make 1000 cc.

AMMONIUM CARBONATE TEST SOLUTION (U.S.P)—Dissolve 10.5 Gm of reagent ammonium carbonate and 20 cc of ammonia T.S. in sufficient distilled water to make 100 cc.

AMMONIUM CHLORIDE TEST SOLUTION [2 *N.*] (U.S.P.)—Dissolve 10.5 Gm of reagent ammonium chloride in sufficient distilled water to make 100 cc.

AMMONIUM CHLORIDE-AMMONIUM HYDROXIDE TEST SOLUTION (U.S.P.)—Mix equal volumes of distilled water and strong solution of ammonia, and saturate with ammonium chloride.

AMMONIUM MOLYBDATE TEST SOLUTION (U.S.P.)—Dissolve 6.5 Gm of finely powdered molybdic acid in a mixture of 14 cc of distilled water and 14.5 cc of

stronger ammonia T.S. Cool the solution and add it slowly, with stirring, to a well-cooled mixture of 32 cc of nitric acid, and 40 cc of distilled water. Allow to stand for 48 hours and filter through asbestos. This solution deteriorates upon standing. If, upon the addition of 2 cc of sodium phosphate T.S. to 5 cc of the solution, an abundant yellow precipitate does not form at once or after slight warming, the solution should not be used. Preserve in the dark: if a precipitate forms, use only the clear, decanted solution.

AMMONIUM OXALATE TEST SOLUTION [0.5 *N.*] (U.S.P.)—Dissolve 3.5 Gm of ammonium oxalate in sufficient distilled water to make 100 cc.

AMMONIUM SULFIDE TEST SOLUTION (U.S.P.)—Saturate ammonia T.S. with hydrogen sulfide and add two-thirds of its volume of ammonia T.S. Residue upon ignition, not over 0.05 percent. The solution is not rendered turbid either by magnesium sulfate T.S. or by calcium chloride T.S. (carbonate).

This solution must not be used if an abundant precipitate of sulfur is present. Preserve in small, well-filled, dark amber-colored bottles, in a cool, dark place.

AMMONIUM THIOCYANATE TEST SOLUTION (U.S.P) [approximately 1 *N.*]—Dissolve 8 Gm of ammonium thiocyanate in sufficient distilled water to make 100 cc.

BARIUM CHLORIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 12 Gm of barium chloride in sufficient distilled water to make 100 cc.

CALCIUM CHLORIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 7.5 Gm of calcium chloride in sufficient distilled water to make 100 cc.

CALCIUM SULFATE TEST SOLUTION (U.S.P)—A saturated solution of calcium sulfate in distilled water.

CHLORINE TEST SOLUTION [*Chlorine Water*] (U.S.P.)—A saturated solution of chlorine in distilled water. The solution should be kept in a small, dark amber-colored, glass-stoppered bottle, which should be completely filled. Chlorine T.S., even when kept from light and air, is apt to deteriorate. When full strength is required, it must be freshly prepared. Preserve in a dark, cool place.

COBALT-URANYL ACETATE TEST SOLUTION (U.S.P.)—*Solution I*—Add 40 Gm of uranyl acetate to 30 Gm of glacial acetic acid and add sufficient distilled water to make the solution measure 500 cc. *Solution II*—Add 200 Gm of cobalt acetate to 30 Gm of glacial acetic acid and sufficient distilled water to make the solution measure 500 cc.

Heat the separate solutions at a temperature of about 75°C until the salts have dissolved, then mix the two solutions and cool to 20°C. Maintain the temperature at this point for about 2 hours to separate the excess salts from solution and then filter through a dry filter.

CUPRIC-AMMONIUM SULFATE TEST SOLUTION (U.S.P.)—To cupric sulfate T.S. add ammonia T.S., drop by drop, until the precipitate at first formed is nearly but not completely dissolved. Allow to settle and decant the clear solution. This solution must be freshly prepared.

CUPRIC SULFATE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 12.5 Gm of cupric sulfate in sufficient distilled water to make 100 cc.

DIMETHYLAMINO-BENZALDEHYDE TEST SOLUTION (U.S.P.)—Dissolve 0.125 Gm of p-dimethylaminobenzaldehyde in a cooled mixture of 65 cc of sulfuric acid and 35 cc of distilled water, and add 0.05 cc of ferric chloride T.S. This solution must not be used if it has been prepared longer than 7 days.

DINITROPHENYLHYDRAZINE TEST SOLUTION (U.S.P.)—Dissolve 1.5 Gm of dinitrophenylhydrazine in a cooled mixture of 10 cc of sulfuric acid and 10 cc of distilled water. Add enough of a mixture of 1 volume of aldehyde-free alcohol and 3 volumes of distilled water to make the volume of the solution 100 cc, and filter if necessary.

DIPHENYLAMINE TEST SOLUTION (U.S.P.)—Dissolve 1.0 Gm of diphenylamine in 100 cc of sulfuric acid. The solution should be colorless.

FERRIC CHLORIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 9 Gm of ferric chloride in sufficient distilled water to make 100 cc.

FERROUS SULFATE TEST SOLUTION (U.S.P.)—Dissolve 8 Gm of clear crystals of ferrous sulfate in about 100 cc of recently boiled and thoroughly cooled distilled water. This solution must be freshly prepared.

FERROUS SULFATE TEST SOLUTION, ACID [0.25 *N.*] (U.S.P.)—Dissolve 7 Gm of ferrous sulfate crystals in 90 cc of recently boiled and thoroughly cooled distilled water and add sufficient sulfuric acid to make 100 cc. This solution must not be kept for long periods of time.

FUCHSIN-SULFUROUS ACID TEST SOLUTION (U.S.P.)—Dissolve 0.2 Gm of basic fuchsin in 120 cc of hot distilled water and allow the solution to cool. Add a solution of 2 Gm of anhydrous sodium sulfite in 20 cc of distilled water and follow by 2 cc of hydrochloric acid. Dilute the solution with distilled water to 200 cc and allow to stand at least 1 hour. This solution must be freshly prepared.

HYDROGEN PEROXIDE TEST SOLUTION—Use Liquor Hydrogenii Peroxidi.

HYDROGEN SULFIDE TEST SOLUTION (U.S.P.)—A saturated aqueous solution of hydrogen sulfide, made by passing H_2S into cold distilled water. Keep the solution in small, dark amber-colored bottles, filled nearly to the top. Do not use it unless it possesses a strong odor of H_2S and unless it produces at once a copious precipitate of sulfur when added to an equal volume of ferric chloride T.S. Preserve in a cool, dark place.

HYDROXYLAMINE HYDROCHLORIDE TEST SOLUTION (U.S.P.)—Dissolve 3.5 Gm of hydroxylamine hydrochloride in 95 cc of 60 percent alcohol, add 0.5 cc of a 0.1 percent solution of bromophenol blue and half-normal alcoholic potassium hydroxide until a greenish tint develops in the solution. Then add sufficient 60 percent alcohol to make the solution measure 100 cc.

IODINE AND POTASSIUM IODIDE TEST SOLUTION (U.S.P.)—Dissolve 0.5 Gm of iodine and 1.5 Gm of potassium iodide in 25 cc of distilled water.

IODOBROMIDE TEST SOLUTION [Hanus Solution] (U.S.P.)—Dissolve 13.2 Gm of reagent iodine in 1000 cc of glacial acetic acid with the aid of gentle heat if necessary. Cool the solution to 25°C and determine the iodine content in 20 cc by titration with tenth-normal sodium thiosulfate. Add to the remainder of the solution a quantity of bromine equivalent to that of the iodine present. Preserve in glass-stoppered bottles, protected from light.

LEAD ACETATE TEST PAPER (U.S.P)—Immerse

strips of heavy white filter paper, 6 mm in width and 8 cm in length, in lead acetate T.S.; drain off the excess liquid and dry the paper on glass in an oven at 100°C, avoiding contact with metal.

LEAD ACETATE TEST SOLUTION [0.5 *N.*] (U.S.P.)—Dissolve 9.5 Gm of clear, transparent crystals of lead acetate, in sufficient recently boiled distilled water to make 100 cc. Preserve in well-stoppered bottles.

LEAD ACETATE TEST SOLUTION, ALCOHOLIC [0.1 *N.*] (U.S.P.)—Dissolve 2 Gm of clear, transparent crystals of lead acetate in sufficient alcohol to measure 100 cc. Preserve in well-stoppered bottles.

MERCURIC BROMIDE TEST PAPER (U.S.P.)—Cut stiff, heavy quantitative filter paper into strips 2.5 mm in width and about 12 cm in length. Immerse these strips for 1 hour in alcoholic mercuric bromide T.S. Remove from solution without touching that portion of the strip which is to be used to form the stain. Allow the alcohol to evaporate spontaneously while the strips are suspended from glass rods. Place them at once in a glass-stoppered, wide-mouthed bottle, and protect from light.

MERCURIC BROMIDE TEST SOLUTION, ALCOHOLIC [0.3 *N.*] (U.S.P.)—Dissolve 5 Gm of mercuric bromide in 100 cc of alcohol, employing gentle heat to facilitate solution. Preserve in glass-stoppered bottles, and protect from light.

MERCURIC IODIDE TEST SOLUTION [*Valser's Reagent*] (U.S.P.)—Slowly add a 10 percent solution of potassium iodide to red mercuric iodide until almost all of the red mercuric iodide is dissolved. Remove the excess mercuric iodide by filtration. A solution containing 10 Gm of potassium iodide in 100 cc dissolves approximately 14 Gm of HgI_2 at 20°.

MERCURIC NITRATE TEST SOLUTION [4 *N.*] (U.S.P.)—Dissolve 40 Gm of red mercuric oxide in a mixture of 32 cc of nitric acid and 15 cc of distilled water. Preserve in glass-stoppered bottles, protected from light.

MERCURIC-POTASSIUM IODIDE TEST SOLUTION [*Mayer's Reagent*] (U.S.P.)—Dissolve 1.358 Gm of mercuric chloride in 60 cc of distilled water. Dissolve 5 Gm of potassium iodide in 10 cc of distilled water. Mix the two solutions and add sufficient distilled water to make 100 cc.

MERCURIC-POTASSIUM IODIDE TEST SOLUTION, ALKALINE [*Nessler's Reagent*] (U.S.P.)—Dissolve 10 Gm of potassium iodide in 10 cc of distilled water, and add slowly, with stirring, a saturated aqueous solution of mercury bichloride until a slight red precipitate remains undissolved. To this mixture add 30 Gm of potassium hydroxide. After solution has taken place, add 1 cc more of the saturated aqueous solution of mercury bichloride. Dilute with distilled water to 200 cc. Allow the precipitate to settle and draw off the clear liquid. A 2-cc portion of this reagent, when added to 50 cc of distilled water containing 0.05 mg of ammonia, produces at once a yellowish brown coloration.

MERCURY BICHLORIDE TEST SOLUTION [0.5 *N.*] (U.S.P.)—Dissolve 6.5 Gm of mercury bichloride in sufficient distilled water to make 100 cc.

MERCURIC SULFATE TEST SOLUTION (A.O.A.C.)—Mix 5 grams of yellow mercuric oxide with 40 ml of water, add with stirring 20 ml of sulfuric acid and 40 ml of water, and stir until completely dissolved.

POTASSIUM CHROMATE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 10 Gm of potassium chromate in sufficient distilled water to make 100 cc.

POTASSIUM DICHROMATE TEST SOLUTION [1 *N.*] (U.S.P.)—Based on the Basicity of CrO_3—Dissolve 7.5 Gm of potassium dichromate in sufficient distilled water to make 100 cc.

POTASSIUM FERRICYANIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 1 Gm of potassium ferricyanide in 10 cc of distilled water. This test solution must be freshly prepared.

POTASSIUM FERROCYANIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 1 Gm of potassium ferrocyanide in 10 cc of distilled water. The solution must be freshly prepared.

POTASSIUM HYDROXIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 6.5 Gm of potassium hydroxide in sufficient distilled water to make 100 cc.

POTASSIUM IODIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 16.5 Gm of potassium iodide in sufficient distilled water to make 100 cc. Preserve in amber-colored bottles.

POTASSIUM PERMANGANATE TEST SOLUTION (U.S.P.)—Use tenth-normal potassium permanganate.

SILVER NITRATE TEST SOLUTION (U.S.P.)—Use tenth-normal silver nitrate.

SILVER SULFATE TEST SOLUTION (U.S.P.)—Add 1 Gm of silver sulfate to 100 cc of distilled water in a glass-stoppered bottle, shake thoroughly and allow to stand overnight. Decant the clear solution when required for use.

SODIUM BITARTRATE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 1 Gm of sodium bitartrate in sufficient distilled water to make 10 cc. This test solution must be freshly prepared.

SODIUM CARBONATE TEST SOLUTION [2 *N.*] (U.S.P.)—Dissolve 12.5 Gm of monohydrated sodium carbonate in sufficient distilled water to make 100 cc.

SODIUM COBALTINITRITE TEST SOLUTION (U.S.P.)—Dissolve 4 Gm of cobaltous chloride and 10 Gm of sodium nitrite in about 50 cc of distilled water, add 2 cc of acetic acid, and dilute with sufficient distilled water to make 100 cc. This reagent must not be kept longer than 3 months. It may be preserved for this length of time by the occasional addition of a few drops of acetic acid.

SODIUM HYDROSULFITE TEST SOLUTION, ALKALINE (U.S.P.)—Dissolve 50 Gm of potassium hydroxide in 70 cc of distilled water, and 50 Gm of sodium hydrosulfite in 250 cc of distilled water. When the test solution is required mix 40 cc of the hydroxide solution with the 250 cc of the hydrosulfite solution. The sodium hydrosulfite solution should be freshly prepared.

SODIUM HYDROXIDE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 4.3 Gm of sodium hydroxide in sufficient distilled water to make 100 cc.

SODIUM NITROPRUSSIDE TEST SOLUTION (U.S.P.)—Dissolve 1 Gm of sodium nitroprusside in sufficient distilled water to make 20 cc. It must be freshly prepared.

SODIUM PHOSPHATE TEST SOLUTION [1 *N.*] (U.S.P.)—Dissolve 12 Gm of clear crystals of sodium phosphate in sufficient distilled water to make 100 cc.

SODIUM PHOSPHOTUNGSTATE TEST SOLUTION

(U.S.P.)—To a solution of 20 Gm of sodium tungstate in 100 cc of distilled water, add sufficient phosphoric acid to impart a strongly acid reaction to litmus paper, and filter. When required for use, decant the clear solution from any sediment that may be present. Preserve the solution in amber-colored, glass-stoppered bottles.

SODIUM THIOSULFATE TEST SOLUTION (U.S.P.)—Use tenth-normal sodium thiosulfate.

STANNOUS CHLORIDE TEST SOLUTION (U.S.P.)—Dissolve 1.5 Gm of stannous chloride in 10 cc of distilled water containing a small amount of hydrochloric acid. Preserve the solution in a glass-stoppered bottle in which a fragment of reagent tin has been placed. The solution must be freshly prepared at frequent intervals.

STANNOUS CHLORIDE TEST SOLUTION, ACID (U.S.P.)—Dissolve 8 Gm of stannous chloride in 500 cc of reagent hydrochloric acid. This solution should be used within 3 months after the time of its preparation. Preserve in a glass-stoppered bottle.

STARCH IODIDE PASTE TEST SOLUTION (U.S.P.)—Heat 100 cc of distilled water in a 250-cc beaker to boiling, add a solution of 0.75 Gm of potassium iodide in 5 cc of distilled water, then follow with 2 Gm of zinc chloride dissolved in 10 cc of distilled water. While the solution is boiling add, with stirring, a smooth suspension of 5 Gm of potato starch in 30 cc of cold distilled water, and continue to boil for 2 minutes, then cool. Preserve Starch Iodide Paste T. S. in well-closed containers in a cold place.

STARCH-POTASSIUM IODIDE TEST SOLUTION (U.S.P.)—Dissolve 0.5 Gm of potassium iodide in 100 cc of freshly prepared starch T.S. This solution should not be used if it is more than 24 hours old.

STARCH TEST SOLUTION (U.S.P.)—Triturate 1 Gm of arrowroot starch with 10 cc of cold distilled water and pour slowly with constant stirring into 200 cc of boiling distilled water. Boil the mixture until a thin, translucent fluid is obtained. Allow to settle and use only the clear, supernatant liquid. Longer boiling than necessary renders the test solution less sensitive. The test solution must be freshly prepared.

TANNIC ACID TEST SOLUTION (U.S.P.)—Dissolve 1 Gm of tannic acid in 1 cc of alcohol and add sufficient distilled water to measure 10 cc. This solution should be freshly prepared.

TARTARIC ACID TEST SOLUTION [4 *N.*] (U.S.P.)—Dissolve 3 Gm of tartaric acid in sufficient distilled water to measure 10 cc. This solution should be freshly prepared.

TURMERIC TEST SOLUTION (U.S.P.)—Macerate 20 Gm of powdered turmeric, the dried root of *Curcuma longa* Linne (Fam. *Zingiberaceae*), with 4 successive portions of 100 cc each of cold distilled water, decanting the clear liquid portion each time and discarding it. Dry the residue at a temperature not over 100°C. Macerate with 100 cc of alcohol for several days and filter.

ZINC SOLUTION, AMMONIACAL (B.P.C. 1934)—Dissolve 7.7 grams zinc in about 75 ml of dilute hydrochloric acid, add an excess of ammonia solution, and dilute to 100 ml with water.

ABIETIC ACID: See Rosin

C-6—ACACIA (*U.S.P.*)

Identification: Add 0.2 cc of diluted lead subacetate T.S. to 10 cc of a 2 percent cold, aqueous solution of Acacia; a flocculent, or curdy, white precipitate is immediately produced.

Optical Rotation: A 10 percent aqueous solution of Acacia shows but slight laevorotation.

Water Insoluble Residue: Dissolve 5 Gm of powdered or finely ground Acacia in about 100 cc of distilled water in a 250-cc Erlenmeyer flask, add 10 cc of diluted hydrochloric acid, and boil gently for 15 minutes. Filter by suction, while hot, through a filtering crucible, previously tared, wash thoroughly with hot distilled water, dry at 100°C and weigh. The weight of the residue thus obtained should not exceed 50 mg.

Starch or Dextrin: Boil a 2 percent aqueous solution of Acacia, and cool; it does not give a bluish or reddish color with iodine T.S.

Tannin-Bearing Gums: Add 0.1 cc of ferric chloride T.S. to 10 cc of a 2 percent aqueous solution of Acacia; no blackish coloration or blackish precipitate is produced.

C-7—ACACIA—IDENTIFICATION REACTIONS FOR

(*I. C. Ritsema. Pharm. Weekblad* **72**, *105, 1935*)

The ferric chloride, borax and alcohol reactions of the Netherlands Pharmacopoeia did not give satisfactory reactions, the precipitates dissolving upon shaking. Upon increasing the pharmacopoeial concentrations five times, ferric chloride gave a gelatinous brown precipitate, 0.100 Gm of borax a gelatinous white precipitate, and 5 cc alcohol a white precipitate. The identification reaction with basic lead acetate was visible in dilutions of 1:10,000. With the latter reaction the author advises that a blank be run, especially if the lead precipitate is not immediately visible. It is advised that the following reaction be added to the above: 1 drop of hydrogen peroxide (3 percent is added to 5 cc of a 5 percent solution to the gum to which a trace of benzidine has been added. Within a few minutes the solution will assume the color of benzidine blue. The solutions should be made in the cold so that the peroxidase will not be destroyed through the heat of reaction. The author found that old gums required a greater concentration to give a positive reaction and suggests that the peroxidase content of the gum diminishes with age.

C-8—ACACIA GUM (*A.A.T.C.C.*)

Ash: Weigh accurately about 1 gram of the sample into a porcelain crucible and ignite to constant weight.

Quantitative Estimation: Dissolve 50 grams of copper acetate in water, add an excess of ammonia and dilute the solution to 1 liter with water and alcohol in such proportions that the final solution contains 50 percent alcohol. Dissolve 5 grams of acacia gum in a liter, pipette out a 50 ml aliquot and add 50 ml of alcohol and 25 ml of the copper reagent with constant stirring. Allow the precipitate to settle, then filter on a Gooch, wash with 50 percent alcohol containing a little ammonia and dry to constant weight at 105°C. After weighing, ignite and weigh the ash. The difference in the two weights represents acacia gum.

C-9—ACETATE (*U.S.P.*)

When warmed with concentrated sulfuric acid, acetates evolve acetic acid. If acetic acid or an acetate is warmed

with sulfuric acid and alcohol, the characteristic odor of ethyl acetate is evolved. With neutral solutions of acetates, ferric chloride T. S. produces a deep red color which is destroyed by the addition of mineral acids.

ACETONE: See also C-4

C-10—ACETONE, NEW TEST FOR

(*J. Ingram, Brit. Med. J., i, 512, 1944*)

A reliable and simple modification of Rothera's test (*J. Physiol., 1908,* **37,** *491*) is used for the detection of acetone. Grind 3 Gm of sodium nitroprusside to a powder, add 100 Gm of ammonium sulfate and 50 Gm of anhydrous sodium carbonate and mix well. Store in a dry bottle. For the test, place a small amount of the powder (about ½ inch) in a dry test-tube and saturate with the solution under examination. The presence of acetone is indicated by the development of a faint to deep permanganate color on the powder within two minutes. A brown color does not constitute a positive reaction. (*The Analyst* **69,** *220, 1944.*)

Research Laboratory—John H. Breck, Inc.

C-11—ACETONE, ISOPROPYL AND ETHYL ALCOHOLS, QUALITATIVE TESTS FOR

(*Tentative*)

(*M. Orchin, J. Assoc. Off. Agr. Chem.* **25,** *839, 1942*)

Acetone in the absence of other ketones

Reagent: 2,4-dinitrophenylhydrazine solution—Suspend 2 Gm of 2,4-dinitrophenylhydrazine in 15 ml of 2 *N* HCl, add 10 ml of HCl, then 600 ml of 2 *N* HCl, and filter.

Determination: Test 1 ml of the sample with 5 ml of the reagent (precipitate indicates acetone present). To obtain sufficient material for identification, treat 5 ml of the solution with 50 ml of the reagent. After swirling mixture and allowing to stand for 15 minutes, filter into Gooch crucible and dry at 100°. Dissolve the hydrazone in hot ethyl alcohol, and filter; concentrate the filtrate to about 5 ml and allow to cool and crystallize. Acetone 2,4-dinitrophenylhydrazone melts at 128°.

Isopropyl and Ethyl Alcohols

When either is present in at least 5 percent aqueous solution.

Reagents: 3,5-dinitrobenzoyl chloride—The c.p. crystalline material obtained from Eastman Kodak Company can be used as it is packed without further purification.

Ether-petroleum benzin solvent—Mix 1 volume of ether with 5 volumes of petroleum benzin. The 3,5-dinitrobenzoates are easily soluble in this solvent whereas 3,5-dinitrobenzoic acid is practically insoluble.

Determination: Transfer 100 ml of the sample to a 150 ml Claissen flask fitted with a thermometer and a rather long side arm bent downward at a right angle about 4″ from the end. (A test tube immersed in an ice-salt mixture is a convenient receiver.) Place a bumping stone in flask and immerse in beaker of H_2O. Heat water bath to boiling and continue distillation until the thermometer inside flask reaches 90°. Add to the test tube about 1 gram of Na_2SO_4 and keep in ice box 1-2 hours to complete drying of the alcohol. Filter through small funnel into second test tube containing about 0.1 gram of 3,5-dinitrobenzoyl chloride. Stopper tube immediately and immerse lower end in H_2O at 75-80°. Shake gently and continue heating for 30 minutes. Cool solution, scratching side of the tube to induce crystallization. Extract crystalline material with the ether-petroleum benzin by filling the tube with the solvent and shaking. Filter into a separator. Repeat the extraction 4 or 5 times. Extract the ether solution with 5 percent Na_2CO_3, wash thoroughly with H_2O and filter through a funnel containing Na_2SO_4. Collect filtrate in beaker, evaporate solvent, and determine melting point of residue.

Isopropyl 3,5-dinitrobenzoate melts at 122°. Ethyl 3,5-dinitrobenzoate melts at 92°.

When either or both are present in approximately 1 percent aqueous solution of each.

Transfer about 10 ml of the sample to 50 ml Erlenmeyer flask and add 10 ml of the dinitrophenylhydrazine reagent. The formation of a flocculent precipitate of acetone 2,4-dinitrophenylhydrazone indicates presence of acetone. If acetone is present, proceed as directed in **(I)** and if absent, proceed as directed in **(II)**.

(I) *Acetone Present.*—Place 10 ml of the sample in 200 ml Erlenmeyer flask and add 10 ml of H_2O, 0.4-0.5 gram of paraformaldehyde, and 10 ml of 5 percent NaOH. Place flask on hot plate under reflux and heat to boiling. Continue the heating to the formation of a resin indicated by appearance of a precipitate. While the mixture is still hot add 50 ml of Fehling's solution through top of condenser. (*An excess should be present, indicated by characteristic blue color.*) Allow mixture to cool, transfer to a 500 ml Kjeldahl flask, and distil into another Kjeldahl flask until about 50 ml is collected. To distillate add 50 ml of 10 percent $K_2Cr_2O_7$, followed by 100 ml of H_2SO_4 (1 + 3). Let mixture stand with occasional swirling for 1 hour, then add 100 ml of 25 percent $FeSO_4$ and distil slowly. When 25 ml of distillate is collected change receivers and collect an additional 50 ml. Test the first fraction with the dinitrophenylhydrazine reagent. (A precipitate indicates presence of isopropyl alcohol in unknown.) Test about 5 ml of second fraction for acetic acid by adding 1 ml of 5 percent $La(NO_3)_3$, followed by 1 ml of 0.02 *N* iodine and 1 drop of NH_4OH. Heat over burner, and if acetic acid is present (indicating ethyl alcohol in unknown) a deep blue color will develop.

(II) *Acetone absent.*—Transfer 10 ml of sample to 50 ml Erlenmeyer flask and add 10 ml of $HgSO_4$ *A.O.A.C. Test Solution.* Place on steam bath and heat for 15 min-

utes. (A white-yellow precipitate indicates presence of isopropyl alcohol.) If it is present, transfer 10 ml of the unknown to Kjeldahl flask, add 50 ml of H_2O, and proceed as directed in **(I)**, beginning "add 50 ml of 10 percent $K_2Cr_2O_7$ . . ."

If isopropyl alcohol is absent, test 10 ml of the unknown by adding a few drops of 5 percent NaOH solution and an excess of I-KI solution. An odor of iodoform indicates presence of ethyl alcohol.

C-12—ACETONE, KETONES, ISOPROPYL ALCOHOL AND TERTIARY BUTYL ALCOHOL, DETECTION OF

(A.O.A.C. Tentative)

Reagent: Mercuric sulfate test solution.—Mix 5 Gm of yellow HgO with 40 ml of H_2O, add with stirring 20 ml of H_2SO_4 and 40 ml of H_2O, and stir until completely dissolved.

Measure 100-200 ml of sample into distillation flask, add 12.5-25 ml of H_2O, and distil slowly 100-200 ml, depending upon amount of sample taken, using mercury valve to prevent loss of alcohol.

Determination: To 2 ml of distillate, add 3 ml of H_2O and 10 ml of the mercuric sulfate solution. Heat on boiling water bath 3 minutes. A white or yellow precipitate forming within 3 minutes indicates presence of any of above-mentioned compounds. Disregard any precipitate forming after 3 minutes on boiling water bath.

C-13—ACETYL AND HYDROXYL VALUES

(A.O.C.S.)

The acetyl value is defined as the number of milligrams of potassium hydroxide required for the neutralization of the acetic acid obtained on saponifying one gram of an acetylated fat or wax, and is a measure of the hydroxyl content of the sample. However, in using the Andre-Cook formula, it must be remembered that the calculations are based on the weight of acetylated fat. The hydroxyl value may be defined as the number of milligrams of potassium hydroxide equivalent to the hydroxyl content of the sample. The hydroxyl value is based on the weight of the unacetylated fat.

Reagents

1. C. P. Freshly Distilled Acetic Anhydride (99-100 percent).
2. 0.5 Normal Hydrochloric Acid.
3. Alcoholic Potassium Hydroxide: Dissolve 40 grams of pure potassium hydroxide in 1 liter of 95 percent, redistilled, ethyl alcohol. The alcohol should be redistilled from potassium hydroxide over which it has been standing for some time, or with which it has been boiled for some time, using a reflux condenser. The solution must be clear and the potassium hydroxide free from carbonates.

Procedure

a. *Acetylization* (A.O.A.C. Method): Boil 50 ml of the sample with 50 ml of acetic anhydride, under a reflux condenser, for 2 hours. Pour the mixture into 500 ml of distilled water in a beaker and boil for 15 minutes while bubbling a stream of carbon dioxide through the solution to prevent bumping. Siphon off the water, add 500 ml more water and boil again for 15 minutes. Repeat the siphonation and boil for 15 minutes with a third 500-ml portion of water. Allow the mixture to cool and separate the aqueous layer, which should be neutral to litmus. Transfer the acetylated sample to a separatory funnel and wash with two 200-ml portions of warm water. Separate as much of the water as possible, add 5 grams of anhydrous sodium sulfate to the acetylated sample and let stand for one hour, agitating occasionally to assist the drying. Filter through a dry, folded filter, preferably in an oven heated to 100°-110°C, and keep the filtered sample in the oven until the sample is completely dry. The acetylated product should be clear and brilliant.

b. *Determination of Saponification Number:* Weigh accurately about 5 grams of the filtered sample into a 250-300 ml Erlenmeyer flask. Pipette 50 ml of the alcoholic potassium hydroxide solution into the flask, allowing the pipette to drain for a definite time. Connect the flask with an air condenser and boil until the fat is completely saponified (about 30 minutes). Cool and titrate with the 0.5 *N* hydrochloric acid, using phenolphthalein T.S. as an indicator. Conduct one or two blank determinations, using the same pipette and draining for the same length of time as above. Calculate the saponification number (milligrams of potassium hydroxide required to saponify one gram of fat). The saponification numbers are to be determined on both acetylated and unacetylated portions.

1. a = ml 0.5 N HCl required to titrate blank.
   b = ml 0.5 N HCl required to titrate sample.

$$\text{Saponification number} = \frac{(a\text{-}b)\ 28.05}{\text{weight of sample}}$$

2. S = Saponification number before acetylation.
   S′ = Saponification number after acetylation.
   A = Acetyl Value
   H = Hydroxyl Value

$$A = \frac{S'\text{-}S}{1.000 - 0.00075S}$$

$$H = \frac{S'\text{-}S}{1.000 + 0.00075H}$$

To calculate the Acetyl Value from the Hyroxyl Value:

$$A = \frac{H}{1.000 + 0.00075H} \quad : \quad H = \frac{A}{1.000 - 0.00075A}.$$

Notes: Determination of the acetyl value by the filtration method or distillation method is extremely difficult and unreliable. The Andre-Cook saponification method yields accurate and concordant results on fats and oils containing stable hydroxyl groups, such as castor oil, and is by far the simplest and easiest to manipulate. For blown oils and others, having unstable hydroxyl groups, none of the methods commonly used yields concordant results.

C-14—ACIDS & ALKALIS IN PETROLEUM PRODUCTS

(T.G.A. Method No. 2)

Shake 20 grams of the product to be tested, in melted form, with an equal amount of hot distilled water. The water remains neutral to litmus and has no more than a faint effect on alkacid test paper.

C-15—ACID VALUE

(Free Fatty Acids) (U.S.P.)

The acid value is the number of milligrams of potassium hydroxide required to neutralize the free acids in 1 gram of substance. The acidity may also be expressed as the number of cubic centimeters of tenth-normal sodium hydroxide required to neutralize the free acid in 10 grams of substance. The acidity of fats, oils, waxes, fatty acids, resins, and balsams is determined by dissolving a weighed quantity of the sample in alcohol or a mixture of equal volumes of alcohol and ether (either solvent having been neutralized with dilute sodium hydroxide to a phenolphthalein end-point), adding phenolphthalein T.S. as the indicator, and titrating with standard sodium hydroxide solution to a pink color that persists after shaking the mixture for 30 seconds.

The method: Unless otherwise directed, dissolve about 10 grams of the substance, accurately weighed, in 50 cc of a mixture of equal volumes of alcohol and ether (which has been neutralized to phenolphthalein with tenth-normal sodium hydroxide) contained in a flask. If the sample does not dissolve in the cold solvent, connect the flask with a reflux condenser and warm slowly, with frequent shaking, until the sample has dissolved. Add 1 cc of phenolphthalein T.S. and titrate with tenth-normal sodium hydroxide until the solution remains faintly pink after shaking for 30 seconds. Calculate either the acid value or the volume of tenth-normal alkali required to neutralize exactly 10 grams of sample, as directed.

If the oil has been saturated with carbon dioxide for the purpose of preservation, the solution in alcohol-ether must be boiled gently for 10 minutes under the reflux condenser before titration. The oil may also be freed from carbon dioxide by exposing it in a shallow dish in a vacuum desiccator for 24 hours before weighing the samples.

C-16—ACONITIC, ITACONIC AND GLUTACONIC ACIDS, COLOR REACTION FOR

(M. Deffner & A. Issidoridis, Biochem. Z. **314,** *307, 1943)*

Free aconitic acid gives a brown color with alpha-brompyridine, itaconic acid takes about a second to develop such a color and glutaconic acid several seconds to develop, giving first a violet then a brown, With acetic anhydride, pyridine, aconitic acid gives a brown changing to cherry red to fuchsia red. Itaconic acid gives a light noncharacteristic brown and glutaconic acid a yellow orange changing to orange brown or a red color. These reactions will detect about 30 gamma. *(Thru J. Am. Pharm. Assoc.* **33,** *263, 1944.)*

C-17—ALCOHOLS USE OF XANTHATES IN IDENTIFICATION OF

(I. S. Shupe, J. Assoc. Off. Agr. Chem. **25,** *495, 1942)*

The xanthates are useful derivatives for the identification of alcohols since in many cases they have quite definite melting points, and also easily determinable iodine equivalents directly related to their molecular weights. Some of the glycols and glycol ethers, which form few solid derivatives, yield good characterizing crystalline xanthates.

Preparation of Potassium Xanthates

Place 10-25 ml of an aqueous solution, containing ½-1 gram of the alcohol in a glass-stoppered separatory funnel. Add solid KOH (85 percent KOH, e.g., pellets) equivalent to about 1½ times the weight of solution used (i.e., 15-37.5 grams). Cool under a stream of water to about 40°C. Add 5 ml each of CS_2 and acetone (both alcohol free) and shake cautiously. Release pressure by opening the stopcock. Shake the funnel vigorously several times during a 15-minute interval.

I. Separation of acetone-soluble xanthates (derived from monohydroxy alcohols).—Add sufficient acetone (25 ml in most cases) to dissolve the xanthate. Discard the lower, aqueous, alkaline layer and filter the acetone through a pledget of cotton into a beaker. Add ethyl ether to precipitate the xanthate. Filter, redissolve in a minimum (about 10 ml) of ethyl alcohol. Add ethyl ether to recrystallize.

Filter off the xanthate, wash with ether, and dry in a vacuum desiccator.

II. Separation of acetone-insoluble xanthates (derived from polyhydroxy alcohols). Filter the aqueous and acetone-CS_2 layers through a sintered-glass crucible. Wash with a little acetone to remove CS_2, then wash with three 10 ml portions of isopropyl alcohol. Dissolve the impure xanthate in a minimum of hot methyl alcohol. Add an equal volume of isopropyl alcohol to crystallize. Filter off the xanthate, dissolve in a minimum of water, and add isopropyl alcohol to recrystallize. Filter, wash with a little isopropyl alcohol and ether, and dry in a vacuum desiccator.

Iodine Equivalent

Dissolve an accurately weighed portion (0.2-0.3 gram) of the dried xanthate in about 200 ml of water. Add starch indicator, and titrate immediately with 0.1 *N* iodine to a blue end point.

$$\text{I-Eq.} = \text{mg of I per gram of xanthate} = \frac{\text{ml of 0.1 } N \text{ iodine} \times 12.69}{\text{grams of xanthate}}$$

Melting or Decomposition Point

Make a preliminary determination of the approximate melting or decomposition point by rapid heating. If the point is above 150° C, use a melting point apparatus preheated to within 10°C of the decomposition point for the final determination. (Some of the potassium xanthates change slowly to solid decomposition products, which do not liquefy below 300°C.)

The glycols show an increasing activity with increasing molecular weight. Xanthate formation is observable almost immediately with triethyleneglycol, in 5-15 minutes with diethyleneglycol, whereas several hours are required with ethyleneglycol. In fact, the yields are so low and the reaction so slow with ethyleneglycol that the method is considered unsuitable for identification of small amounts of this glycol.

Glycerol, sorbitol, and propylene glycol show no xanthate formation by the proposed procedure.

C-18—ALCOHOL CONTENT EASILY AND QUICKLY DETERMINED

Williams (Fisher) Improved Method

A compact, pocket-size, test set for the rapid determination of alcohol content and the presence of caramel in dis-

CLASS	ALCOHOL	MELTING POINT °C	IODINE EQUIVALENT	
			FOUND	THEORY
Xanthates of monohydroxy alcohols—acetone—soluble	Methyl	182-6-	860	868
	Ethyl	225-6	791	792
	Iso-propyl	278-82	727	728
	n-propyl	233-9	727	728
	n-butyl	255-65	671	674
	Iso-butyl	260-70	675	674
	Iso-amyl	260-70	626	627
	Benzyl	178-80	571	571
	Ethyleneglycol-monomethylether	215-6	667	667
	Ethyleneglycol-monoethylether	193-6	620	621
	Ethyleneglycol-monophenylether	177-8	503	503
	Diethyleneglycol-monoethylether	144-5	548	542
	Diethyleneglycol-monoethylether	86-8	511	511
	Diethyleneglycol-monobutylether	Liquid	435	459
Xanthates of polyhydroxy alcohols—acetone—insoluble	Ethyleneglycol	200-5	871	875
	Diethyleneglycol	207-8	759	759
	Triethyleneglycol	203-5	670	671
Xanthates of polyhydroxy alcohols—acetone—insoluble	Triethanolamine	212-4	760-810	774

tilled spirits containing 25 percent to 64 percent alcohol, with an accuracy within 0.5 percent. The test requires 7.5 ml of sample and the time required for a determination is about two minutes.

1st. Readings not affected by presence of glycerin or sugar up to 10 percent.

2nd. Readings not affected by temperature within a range of 70° to 85°F.

3rd. Presence of caramel or other artificial coloring indicated by this test.

Technique. The tube is filled to the 7.5-ml mark with the sample. Williams Reagent is added to the 15 ml mark. The tube should be stoppered and inverted about ten times and held vertically until the separation of reagent and sample is complete. The reagent meniscus is then read off the tube graduations giving the readings directly in percent alcohol.

The Williams Alcohol Test Set consists of a neat leatherette carrying case 9¼ x 2⅛ inches, a graduated tube with rubber stopper, a 4-oz bottle of reagent, a pipette with rubber bulb, three strips of absorbent paper and full directions.

C-19—IDENTIFICATION OF HIGHER ALCOHOLS

It is a well-known fact that especially higher aliphatic alcohols if heated with soda-lime will give off hydrogen and produce a solid hydrocarbon. The method of Richardson & Bracewell (*J. Soc. Chem. Ind.*, **35,** *160, 1916*) is in need of further refinement for cosmetic work, but it does serve as a starting point for the identification of these alcohols in unsaponifiables, especially where it is known that there is no other source of higher alcohols resulting from saponification as of beeswax, spermacetti, sperm oil and lanolin.

In use, the unsaponifiables are mixed with three or four times their weight of soda lime, transferred to a heavy pyrex tube and heated for several hours (at least 3 hours) at 250°C. The cooled mass is powdered and extracted with light petroleum ether in either a Soxhlet or other type of extractor for at least 4 hours. The petroleum ether extract is evaporated, dried and weighed in. The following factors will convert the hydrocarbon residue found into alcohols.

M. P.	B. P.	Hydrocarbon	Alcohol
12.0	214.5	C_{12} x 1.094	Lauryl C_{12}
5.5	252.5	C_{14} x 1.081	Myristyl C_{14}
20.	287.5	C_{16} x 1.070	Cetyl C_{16}
28.	317.0	C_{18} x 1.063	Stearyl C_{18}

Higher aliphatic alcohols can be separated from aqueous emulsions according to U. S. Patent 2,104,803, using hydroxylated compounds of the benzene series, such as orthocresol.

C-20—ALCOHOL SULFATE, TEST FOR

(*Anon. Seifensieder Ztg.*, **66,** *209, 1939*)

Three tests for distinguishing fatty alcohol sulfate solutions from soap solutions are given. They are: (1) test with litmus; soap gives blue color, sulfated alcohol being neutral to acid; (2) dilute mineral acid liberates fatty acids in case of soap but not in the case of alcohol sulfate; (3) calcium chloride forms insoluble soaps with ordinary soap solution but not with sulfated alcohol.

C-21—ALCOHOL ISOBUTYL, COLOR REACTION OF

(*Ztschr. angew. Ch., 349, 1929*)

To the neutral sample, add a 1 percent solution of sodium ferrocyanide. If isobutyl alcohol is present a light brown color will develop in the aqueous layer. If an excess of the isobutyl alcohol is present, the second layer will be colored orange. The color seems to develop better on boiling. Methyl, ethyl and propyl alcohol and acetone will produce turbidity or slight precipitation while amyl acetate precipitates without dissolving upon heating.

C-22—ALCOHOL IN VOLATILE OILS, TEST FOR-BOTTGER

(*Merck Index*)

Shake 5 cc of the oil with 5 cc glycerin in a narrow graduated glass cylinder. The presence of alcohol is recog-

nized by the increase in volume of the glycerin.

C-23—ALDEHYDES, TEST FOR WITH BARBITURIC ACID

(*L. Rosenthaler. Mikrochem.* **21,** *216, 1937*)

A saturated solution of barbituric acid in fuming HCl gives precipitates with benzaldehyde, anisaldehyde, cinnamaldehyde, vanillin, piperonal and furfural. Specific crystals can be recognized.

C-24—DETECTION OF ALDEHYDE WITH PERMANENT TEST PAPER

(*O. Frehden & K. Furst, Mikrochemie,* **26,** *39, 1939*)

Prepare the paper by dipping it in the following solution: dissolve in water malachite green 0.8 grams and 3 grams of sodium sulfite, then add 3 more grams sodium sulfite and filter. Dry the paper strips without heating. They will keep several weeks in closed containers. Malachite green is formed again when the strip comes in contact with an aldehyde. The solution tested must be neutral, and the paper must be perfectly white when used.

C-25—ALKALI SALTS OF ORGANIC ACIDS

(*U.S.P.*)

Unless otherwise directed, heat about 2 Gm of the salt accurately weighed, in a platinum or porcelain crucible (*Caution*—Do not use platinum crucibles for lithium salts), heating at first very gently, then gradually raising the temperature until the salt is thoroughly carbonized. The final temperature must not exceed a dull red heat and the flame of the burner must not come in contact with the carbonized mass. After allowing the carbonized mass to cool, disintegrate it with the aid of a stout glass rod, and transfer the mass and crucible to a beaker. Add 50 cc of distilled water and exactly 50 cc of half normal sulfuric acid, cover the beaker with a watch glass, and boil the contents for 30 minutes. Then filter the solution, and wash the residue with hot distilled water until the washings cease to redden blue litmus paper. Now determine the residual acid in the cooled filtrate by titration with half normal sodium hydroxide, using methyl orange T.S. as the indicator. The volume of half normal sulfuric acid consumed, multiplied by the proper equivalent of the salt, represents the quantity of the salt present in the quantity taken.

C-26—FREE ALKALI, TEST FOR IN SOAPS—STEIN

An aqueous solution of mercuric chloride gives a white precipitate with neutral soap solutions and a yellow-red precipitate with alkaline solutions.

C-27—ALKALIS, DETERMINATION WITH SULFITES

Accurate direct titration of alkali in permanent waving solutions containing sulfites and similar reducing agents is impossible because some of the acid reacts with the sulfite. The use of 5 cc of 17 volume (or 10 cc of 10 volume) peroxide for each 0.1 Gm of the sulfite will oxidize it to the sulfate. Any excess peroxide will not interfere with titration.

Unless volatile alkali is to be titrated, the solution may be brought to boil after the addition of the peroxide prior to titration. Inasmuch as the peroxide of commerce is oftentimes slightly acid in reaction, it should be measured out into the titrating flask, methyl orange indicator added and then brought to neutrality with dilute alkali solution. Usually only a few drops of alkali are required. Then the solution to be tested is measured into the peroxide, heated if possible, cooled somewhat and titrated with standard acid.

C-28—COMBINED ALKALI. TOTAL ANHYDROUS SOAP

(*A.O.C.S.*)

Dissolve 5 to 10 Gm ($\pm$0.01 g) of the sample, depending upon the anhydrous soap content, in 100 cc of water in a 250-cc Erlenmeyer flask. When solution is complete, add dilute sulfuric acid in slight excess, insert a small funnel in the neck of the flask, and heat the flask at a temperature not exceeding 60°C until the fatty acids separate as a clear layer. Transfer to a separatory funnel and shake the acid aqueous liquid with two 20-cc portions of ethyl ether. Dissolve the fatty acids in the ether used for washing the aqueous liquid and shake with 10-cc portions of water until they are no longer acid to methyl orange. Unite the water portions used for washing and shake with 20 cc of ether. Wash this ether until the wash water is neutral to methyl orange. Save the acid water for chloride determination. Unite the ether solutions (if necessary, filter, washing the paper with ether) in a suitable weighed vessel, add 100 cc of neutral alcohol free from carbon dioxide, add phenolphthalein and titrate to exact neutrality with standard sodium hydroxide solution. Evaporate off the alcohol, dry to constant weight as in the determination of matter volatile at 105°C and calculate the percentage of soda soap. This soap naturally includes any mineral oil and neutral fat, which, if determined separately, must be deducted from the result to obtain the true soap. Calculate the combined sodium oxide (Na_2O) and deduct from the weight of soda soap to give the anhydrides. If the original soap was potash soap, proper calculation must be made to reduce to potassium oxide (K_2O), or the titration made directly with standard potassium hydroxide solution. In case the soap shows an excess of free acid, proper corrections must be made in calculating the combined alkali in the original soap. (A blank test should be made on the sodium or potassium hydroxide solution for neutral salts and the proper corrections made if necessary.) With soaps containing a large amount of soluble silicates and soap products containing a high percentage of finely divided material insoluble in water, the foregoing procedure cannot be applied as given. In such cases the filtrate obtained in the determination of total matter insoluble in alcohol can be used after neutralizing any free acid or alkali. Evaporate off the alcohol on a steam bath, take up in water and proceed as above.

With soap products containing a high percentage of matter insoluble in alcohol where approximate results will suffice, such as may be the case with cleansers, soap powders, scouring compounds, pastes, etc., and where agreed upon by the parties interested, the alcoholic solution, obtained after filtering off and washing the matter insoluble in alcohol, may be evaporated directly in a weighed vessel, dried at 105°C to constant weight, and the result reported as soap.

C-29—ALKANOLAMINES, DETECTION OF MONO- AND DIETHANOLAMINES

(*I. S. Shupe, J. Assoc. Off. Agr. Chem.* **24,** *754, 1941*)

Color tests—To a solution containing about 0.2 percent of monoethanolamine, add an equal volume of a solution

composed of 1 gram of sodium nitroprusside and 20 ml of acetone in water to make 100 ml. Add sufficient 2 percent sodium bicarbonate solution to assure an alkaline reaction. A purple color gradually develops in the presence of the primary amine.

To test for diethanolamine, make the test as above, but use 10 ml of acetaldehyde instead of acetone in preparing the reagent. A blue color is formed with the secondary amine.

p-Brombenzene sulfonyl derivatives—Place 10 ml of a slightly acid solution of sample containing not over 100 mg of the ethanolamines in a 250 ml beaker. Dissolve 1 gram of reagent p-brombenzene sulfonyl chloride in 15 ml of acetone and add to the aqueous solution of the sample. Then add approximately 1 gram of powdered sodium bicarbonate. Cover the beaker with a watch glass and heat on a steam bath until the acetone has volatilized (15-20 minutes). Add 10 ml of 10 percent w/v sodium hydroxide and 10 ml of ethyl alcohol. Heat again on the steam bath and evaporate to about 20 ml to remove the alcohol (about 30 minutes).

Diethanolamine—Let cool and transfer to separatory funnel No. 1. Wash the beaker with about 5 ml of water. Extract the contents of funnel No. 1 with four 20 ml portions of chloroform. Combine these four extracts in separatory funnel No. 2 and wash them with 10 ml of 10 percent w/v sodium hydroxide. Draw off the chloroform layer into separatory funnel No. 3 (leaving the sodium hydroxide, wash the chloroform with 10 ml of water, and filter through a pledget of cotton into a tared dish. Save the wash water. Repeat the procedure with two additional 20 ml portions of chloroform, using the sodium hydroxide and the water in separatory funnels Nos. 2 and 3 for the washing. Add these chloroform extracts to the contents of the tared dish, evaporate on a steam bath, dry in a desiccator, and weigh the p-brombenzene sulfonyl diethanolamine.

p-Brombenzene sulfonyl derivative $\times$ 0.324 = diethanolamine.

Reserve the contents of the three separatory funnels in the monoethanolamine determination.

Monoethanolamine—Combine the contents of separatory funnels Nos. 1 and 2. Acidify with 10 ml of concentrated hydrochloric acid and extract with six 25 ml portions of chloroform. Acidify the wash water in separatory funnel No. 3 with a drop of 10 percent hydrochloric acid and use it for washing the chloroform extracts. Filter through cotton, evaporate, and dry as before. Weigh the p-brombenzene sulfonyl monoethanolamine.

p-Brombenzene sulfonyl derivative $\times$ 0.218 = monoethanolamine.

Make a blank determination on 1 gram of the reagent p-brombenzene sulfonyl chloride and apply appropriate corrections.

Both derivatives may be recrystallized from chloroform and petroleum benzin.

Melting point of diethanolamine derivative—105°C.

Melting point of monoethanolamine derivative—94°C.

For the recovery of the ethanolamines from emulsions, such as cosmetic creams, an aqueous extract may be used. Substances extractable with chloroform, which would interfere in the method, may be removed by preliminary extractions from either acid or alkaline solutions before the preparation of the derivative. The ethanolamines bases remain in the aqueous portion. Ammonia should not be added since it forms a sulfonamide corresponding to a primary amine derivative.

C-30—ALKANOL AMINE EMULSIFIERS MONO- AND DI-ETHANOLAMINES, DETECTION OF

(*I. S. Shupe, J. Assoc. Agr. Chem.* **25**, *227, 1942*)

Preparation of Sulfonyl Derivatives

The procedure for preparing the aryl sulfonyl compounds is essentially that described for the preparation of p-bromobenzene sulfonyl derivatives of mono- and diethanolamines (C-*29*). The following reagents may be used:

Benzene sulfonyl chloride (M.P. 12-13°C).

p-Toluene sulfonyl chloride (M.P. 66-69°C).

p-Bromobenzene sulfonyl chloride (M.P. 73-75°C).

If these reagents are to be used for quantitative determinations, they should be completely soluble in acetone and show negligible blanks.

Tri-isopropanolamine being a tertiary amine, forms no sulfonyl derivative.

Triethanolamine, a tertiary amine, does not react with the sulfonyl chloride reagents.

Benzene sulfonyl chloride and other related sulfonyl chlorides show a quite selective activity for primary and secondary amines even in aqueous solutions.

The above method gives a more complete reaction than the conventional Hinsberg reaction described by Mulliken.

TABLE 18

MELTING POINTS OF DERIVATIVES OF SOME AMINE EMULSIFIERS

Compound	Melting Points of Derivatives			
	Benzene Sulfonyl °C.	*p*-Toluene Sulfonyl °C.	*p*-Bromobenzene Sulfonyl °C.	Oxalate* °C.
Monoethanolamine	Liquid	Liquid	94	203
Diethanolamine	130	99	105	—
Morpholine	119	148	153	190-5
2-Amino-2-methyl-1,3-propandiol	75	122	140	226
2-Amino-2-methyl-1-propanol	121	94	132	190-200
Triethanolamine	—	—	—	—
Tri-isopropanolamine	—	—	—	—
Ammonia	153	137	166	dec. below 200

* The oxalates were prepared by adding an equivalent amount of oxalic acid dissolved in alcohol to an alcoholic solution of the amine. They are soluble in excess oxalic acid, and were recrystallized from water and alcohol and dried at 100° C. Diethanolamine and triethanolamine oxalates separated as liquids. Tri-isopropanolamine oxalate was soluble in alcohol. Ammonium oxalate was insolable in excess alcoholic oxalic acid.

C-31—ALKANOLAMINES, VOLUMETRIC DETERMINATIONS OF IN EMULSIONS

(*J. H. Jones, J. Assoc. Off. Agr. Chem.* **27**, *309, 1944*)

The alkanolamines combine with the higher fatty acids to form soaps that are useful as emulsifiers, and a number of such compounds have been proposed for use in the preparation of cosmetic creams and lotions. Among these are the mono-, di- and triethanolamine; tri-isopropanolamine and 2-amino-2-methyl-1,3-propanediol ("amino glycol"). Still other compounds of this type are available and may be found in cosmetics.

In aqueous solution these amines can be accurately titrated. However, the general procedures for the isolation of organic amines cannot be used here since most alkanolamines are neither extractable with organic solvents nor volatile with steam. Experiments have shown, however, that they may be separated from the interfering substances commonly present in cosmetic emulsions by the following procedure: The amine is extracted from the emulsion with hydrochloric or hydrobromic acid, excess acid is removed by evaporation, and the amine is liberated by treatment with silver oxide. After separation from the precipitated silver halide and excess silver oxide by filtration, the liberated amine is titrated with standard acid. The necessary correction for dissolved silver oxide is easily determined by titration with potassium iodide solution and starch-iodine indicator.

PROPOSED METHODS

Reagents

(a) *Silver oxide suspension.*—Dissolve 10 grams of $AgNO_2$ in approximately 100 ml of water and add a slight excess of NaOH. Wash the precipitated Ag_2O with water by decantation until free from NaOH. Transfer to a glass-stoppered bottle and add enough water to make the total volume approximately 200 ml. Shake thoroughly immediately before use.

(b) *Iodine-sulfuric acid solution (free from iodide).*—Shake 5–10 grams of c.p. I with 50–75 ml of approximately 1 *N* H_2SO_4 in a glass-stoppered flask. Decant and discard the solution. Repeat the process until 5 ml of the supernatant liquid gives no color with 50 ml of water containing 2 ml of 0.5 percent starch solution.

(c) *Starch indicator.*—A 0.5 percent solution of soluble starch in water.

(d) *Methyl red indicator.*—A 0.5 percent solution of methyl red in alcohol.

(e) *Standard sulfuric acid solution.*—0.02 *N*. Dilute 200 ml of accurately standardized 0.1 *N* H_2SO_4 to exactly 1 liter with distilled water.

(f) *Standard iodide solution.*—0.02 *N*. Dry c.p. KI for several hours at 135°C. Dissolve 3.320 grams of the dried salt in exactly 1 liter of distilled water.

Procedure

Extraction of the amine.—Place a weighed sample of 1–4 grams in a 200 ml beaker, add 10–20 ml of acetone, and heat on the steam bath until the material dissolves or a fine suspension is obtained. Add 2–3 ml of HCl (or HBr) and stir thoroughly. Slowly add 15–20 ml of water and continue to heat until the acetone is volatilized. Remove from the steam bath and cool until the oils solidify. (Add stearic acid to raise the solidification point of liquid oils.) Loosen the solid oil layer from the sides of the beaker and decant the aqueous layer into a 100 ml volumetric flask. Rinse the beaker and oil cake with approximately 10 ml of water. To the oil remaining in the beaker, add 10–15 ml of water and 2–3 drops of acid, heat to boiling, and stir thoroughly. Cool, and decant as before. Repeat the extraction, cool, decant, and finally wash the beaker and oil with several small portions of water. Bring the combined water extracts to room temperature, dilute to the mark with water, and mix thoroughly.

Isolation and determination of the amine.—Place an aliquot of the acid extract containing 0.05–0.20 milliequivalents of base in a small beaker, concentrate to 2–5 ml, place on the steam bath, and evaporate to dryness. Dissolve the residue in approximately 5 ml of water and add 1 drop of methyl red indicator. Add an excess of the silver oxide suspension (5 ml is usually sufficient), stir thoroughly, wash down the sides of the beaker with a little water, and let stand for 5–10 minutes. Filter through a quantitative filter paper (the filtrate should be clear or only very faintly cloudy) into a 125 ml titration flask and wash the beaker and filter with three 5 ml portions of water. Titrate the filtrate with 0.02 *N* H_2SO_4 to a permanent methyl red end point. (A sharp change from the intermediate to the acid color of the indicator occurs at the end point.)

Add 2 ml of the 0.5 percent starch solution and 5 ml of the iodine-sulfuric acid solution and titrate dropwise with 0.02 *N* KI to a permanent blue end point. Subtract from this titration the amount of 0.02 *N* KI required to give a deep blue color to a mixture of 50 ml of water, 2 ml of the starch solution, and 5 ml of the iodine-sulfuric acid solution. (This blank should be less than 0.05 ml of 0.02 *N* KI.)

Subtract the corrected KI titration from the H_2SO_4 titration to obtain the acid equivalent to the amine alone.

1 ml of 0.02 *N* H_2SO_4 = 1.222 mg of monoethanolamine
= 2.103 mg of diethanolamine
= 2.984 mg of triethanolamine
= 3.825 mg of tri-isopropanolamine
= 2.103 mg of "amino glycol"

C-32—ALMOND OIL, SWEET

(*U.S.P.*)

Solubility.—Expressed almond oil is slightly soluble in alcohol, but is miscible with ether, chloroform, benzene, and with purified benzin.

Foreign Kernel Oils, Sesame, Or Cottonseed Oil.—Shake vigorously for 5 minutes 2 cc of expressed almond oil with a mixture of 1 cc of fuming nitric acid and 1 cc of distilled water: the mixture is not more than slightly colored. (Oil of peach kernels or oil of apricot kernels yields a red mixture, and sesame oil or cottonseed oil yields a brown mixture when similarly treated.)

Mineral Oil and Foreign Fatty Oils.—Heat on a water bath 10 cc of expressed almond oil with 15 cc of an aqueous solution of sodium hydroxide (1 in 6) and 30 cc of alcohol in a flask which has a small, short-stemmed funnel inserted in the neck, and occasionally agitate the mixture until it becomes clear. Transfer the solution to a shallow dish, evaporate the alcohol on a water bath, and mix the residue with 100 cc of distilled water: a clear solution results (mineral oil). Add an excess of hydrochloric acid to this solution, remove the layer of fatty acids which rises to the surface, wash it with warm water, clarify it by heating on a water bath, and allow it to cool to 15°C without

stirring: the fatty acids remain clear for 30 minutes at this temperature (foreign fatty oils).

Foreign Oils.—One volume of the mixed fatty acids obtained in the preceding test, when mixed with 1 volume of alcohol, yields a clear solution, which at 15°C does not deposit any fatty acid or become turbid upon the further addition of 1-volume of alcohol (olive, peanut, cottonseed, sesame, or other fixed oils).

Saponification Value.—The saponification value of expressed almond oil is not less than 190 and not more than 200.

Iodine Value.—The iodine value of expressed almond oil is not less than 95 and not more than 105.

C-33—ALPHA AND BETA NAPHTHOL HEIM'S COLORIMETRIC TEST FOR

(*Am. Perf. p.* 44, *Feb. 1939*)

A method for the estimation of small amounts of B-naphthol in the presence of large amounts of interfering substances (oils of cloves, spearmint, cassia and thyme; menthol, methylsalicylate, phenylsalicylate, benzoic and salicylic acid, phenol, and o-cresol, besides much plycerol, soap and inorganic substances) is outlined here.

Procedure

For comparison, a standard is made up containing a known quantity of B-naphthol-approaching that of the sample under investigation—in the present case 0.004 percent. The ingredients of the sample as found by analysis were also incorporated in that standard. The sum of the eleven "aromatic" substances referred to amounted to 2 percent (equal proportions). The B-naphthol was dissolved therein and the whole mixed with the ingredients that make the bulk of the standard.

Weighed portions of sample and standard are treated exactly alike and quantitatively; i.e., extracted with methanol-Buchner funnel-transferred to a separatory funnel, the methanol adjusted with water to 60 percent and the alkalinity to about 0.05 normal with potassium hydroxide. Then follow three extracts (shake outs) with ether-petrolic ether 1 + 2 (removal of oils, etc.) acidification with dilute hydrochloric acid and several ether extractions. This dried ether solution (sodium sulfate) is evaporated in an Erlenmeyer flask, the residue taken up in petrolic ether (no heating), filtered, washed, evaporated and weighed. A color scale is made up of this final residue from the standard by weighing amounts between 0.1 Gm and 1.0 Gm into test tubes or centrifuge tubes, developing and comparing with the color produced with the sample having been treated likewise.

For developing the coloration, the residue in the tubes—mostly fatty acids—is dissolved in from two to five cc chloroform. One drop alpha naphthylamine hydrochloride (0.5 percent) plus one drop sodium nitrite (15 percent) plus one drop hydrochloric acid (10 percent) are added in quick succession and shaken violently for two seconds. "Icing" is not used. The appearance of an orange nitrosate at this stage can be disregarded. One drop ammonia (20 percent) is added, shaken violently for two seconds, followed by two drops of water and four drops of acetic acid (conc.) and again shaken to clear up the chloroform layer. Centrifuging is an aid to that end, though not necessary. Colors are now matched.

Remarks

If, for example, 0.1 Gm of the residue from the sample produces a color equivalent to that from 0.5 Gm residue from the standard, it is advisable to repeat and add 0.4 Gm fatty acids so as to make conditions equal.

The color produced by a standard as described but without B-naphthol lacks the reddish tinge of the standard with B-naphthol.

The color produced by a standard as described but without phenol, o-cresol, oil of thyme, benzoic and salicylic acid was the same.

C-34—ALUM (*U.S.P.*)

Ammonium Alum & Potassium Alum

Official alum is the double sulfate of either aluminum and potassium or aluminum and ammonium. Both alums have approximately the same solubility in water, namely one gram dissolves in from 7 to 7.5 cc of water at 25°C.

Identification:

a: Sodium hydroxide T.S. added to an aqueous solution of ammonium alum (1 in 20) at first produces a precipitate which completely dissolves in an excess of the reagent, ammonia being involved.

b: Sodium hydroxide T.S. added to an aqueous solution of potassium alum (1 in 20) at first produces a precipitate, which completely dissolves in an excess of the reagent, but no ammonia is involved.

c: When held in a non luminous flame, potassium alum imparts to it a violet color.

d: The addition of 10 cc of sodium bitartrate T.S. to 5 cc of a saturated aqueous solution of potassium alum produces within 30 minutes a white, crystalline precipitate.

e: An aqueous solution of alum (1 in 20) responds to the tests for aluminum and for sulfate.

Assay: Dissolve about 1 Gm of alum, accurately weighed, and about 1 Gm of ammonium chloride in 250 cc of distilled water. Heat the solution to boiling, and add a slight excess of ammonia T.S. to precipitate aluminum hydroxide. Collect the precipitate on a filter, wash thoroughly with hot distilled water, dry, ignite strongly, and weigh. The weight of the aluminum oxide so obtained, multiplied by 8.894, indicates its equivalent in $AlNH_4(SO_4)_2.12H_2O$ and, multiplied by 9.307, indicates its equivalent in $AlK(SO_4)_212H_2O$.

C-35—ALUMINUM (*U.S.P.*)

Solutions of aluminum salts yield with ammonia T.S. a gelatinous white precipitate which is insoluble in an excess of ammonium hydroxide. Sodium hydroxide T.S. or sodium sulfide T.S. produces the same precipitate which dissolves in an excess of either of these reagents.

C-36—ALUMINUM CHLORIDE (*N.F.*)

Identification: An aqueous solution of aluminum chloride (1 in 10) responds to the tests for aluminum and for chloride.

Assay: Dissolve about 0.5 Gm of aluminum chloride, dried over sulfuric acid for 24 hours and accurately weighed, in 100 cc of distilled water, and add about 1 Gm of ammonium chloride. Heat the solution to boiling, add a slight excess of ammonia T.S., and boil if necessary to precipitate on a filter, wash it thoroughly with hot distilled water, dry, ignite strongly, and weigh. Each Gm of

aluminum oxide is equivalent to 4.737 Gm of $AlCl_36H_2O$. Responds to the test for aluminum and chloride.

C-37—ALUMINUM CITRATE

(*PFIZER*)

A fine, white powder, odorless, containing 10.3 percent of Al, 19.4 percent of Al_2O_3 and 76 percent of citrate and 84.1 percent of citric acid monohydrate. 1 gram dissolves in 10 cc of water. Responds to test for aluminum and citrate.

Author's Note: It has been found that solutions of aluminum citrate throw down a precipitate of what appears to be an insoluble basic salt.

C-38—ALUMINUM LACTATE

Contains 9.14 percent Al and 91.86 percent lactic acid. Appears to be freely soluble in water. Responds to the test for aluminum and lactate.

C-39—ALUMINUM PALMITATE

(*METASAP*)

Melting point is 200°C, ash 18 percent. Aluminum Palmitate (Metasap) is insoluble in low molecular weight polar compounds such as ethyl alcohol, ethyl acetate, or acetone. It forms gel at room temperature with hydrocarbons such as mineral spirits, coal tar solvents, turpentine, dipentene, as well as with animal, vegetable oils and mineral oils at higher temperature.

C-40—ALUMINUM STEARATE (MONO)

Melting point is 158-173°C, ash 11.0-15.0 percent. It is insoluble in water, low-molecular weight alcohols, ether, esters, ketones and castor oil. Forms gels with aliphatic and aromatic hydrocarbons; vegetable, animal and fish oils and waxes, etc.

C-41—ALUMINUM STEARATE (DI)

Melting point is 145°-165°C, ash 8.2-9.05 percent. It is insoluble in water, low-molecular weight alcohols, ethers, esters, ketones and castor oil. Forms gels with aliphatic and aromatic hydrocarbons; vegetable, animal and fish oils and waxes.

C-42—ALUMINUM STEARATE (TRI)

Melting point is 91-115°C, ash 5.7-6.6 percent. It is insoluble in water, low-molecular weight alcohols, ethers, esters, ketones and castor oil. Forms gels with aliphatic and aromatic hydrocarbons; vegetable, animal and fish oils, waxes, etc.

C-43—IDENTIFICATION OF ALUMINUM STEARATE

(*METASAP METHOD*)

The most important property of aluminum stearate is its reaction toward various solvents. It has little or no tendency to gel in alcohol, sulfuric ether, ethyl, amyl, or butyl acetate or "Cellosolve." With aliphatic hydrocarbons it gels to a cloudy rigid mass, while with aromatic hydrocarbons the gels have a viscous or flowing character. For example, a 5 percent mixture in kerosene gels at about 180°F to a cloudy, hard, granular paste, while in benzol it gels at about 110°F, to a clear viscous mass.

C-44—ALUMINUM HYDROXY STEARATE (DI)

(*METASAP*)

Melting point is 155°C, ash 8.4 percent. This product differs greatly in solubility over the usual aluminum stearates. It is more soluble in polar compounds and less soluble in non-polar compounds than aluminum stearate. An exception to the rule includes methanol, ethyl acetate and acetone. As a result this product provides an aluminum stearate that can be used with a new class of solvents and oils; such as, castor oil, butanol, amyl acetate, cellosolve, etc.

C-45—ALUMINUM SULFATE

(*N.F.*)

Identification: An aqueous solution of aluminum sulfate (1 in 20) responds to the tests for aluminum and for sulfate.

Assay: Dissolve about 0.5 Gm of aluminum sulfate, accurately weighed, in 100 cc of distilled water and add about 1 Gm of ammonium chloride. Heat the solution to boiling, add a slight excess of ammonia T.S., and boil if necessary to precipitate completely the aluminum hydroxide. Collect the precipitate on a filter, wash it thoroughly with hot distilled water, dry, ignite strongly, and weigh. Each Gm of aluminum oxide is equivalent to 6.537 Gm of $Al_2(SO_4).18H_2O$. Responds to the test for aluminum and sulfate.

C-46—ALUMINUM SULFOCARBOLATE

(*MALLINCKRODT*)

A family colored grayish to grayish-violet powder or crystal containing about 23 percent of water of hydration and 77 percent anhydrous salt, Al 4.9 percent, Al_2O_3 9.33 percent and phenol 61.65 percent. At 25°C, 100 cc of water dissolves 280 Gms of aluminum sulfocarbolate. It is almost as soluble in alcohol and glycerin. Responds to the test for aluminum and sulfocarbolate.

C-47—AMINOBENZOIC ACIDS, REACTIONS FOR—DE CONINCK

(*MERCK INDEX*)

I. o-Aminobenzoic acid, when heated with a slight excess of potassium nitrite, yields a substance that forms a garnet-red solution in dilute alcohol. The *para-* and *meta-*acids form compounds which yield orange solutions.

II. When heated to fusion with ammonium nitrate, the acids form two layers: the lower, pale red and the upper, violet.

III. When heated gently with o-aminobenzoic acid, uranium nitrate yields a bright red sublimate which dissolves in alcohol to an amber-yellow solution. The meta acid gives a brown sublimate and a red-brown alcoholic solution, the para acid an orange sublimate and a deep yellow alcoholic solution.

IV. Zinc chloride heated just to fusion with the ortho acid, forms an amber mass; the meta and para acids produce a deep violet.

V. Stannic chloride acts energetically on the *ortho*-acid. The solution of the product in dilute alcohol is red. The *meta-* and *para*-acids give no reaction, except that sometimes the meta-acid yields a small quantity of violet sublimate.

C-48—AMINOBENZOIC ACID, MICRO-TEST FOR—POZZIESCOT

(*MERCK INDEX*)

A distillate containing the esters is saponified by heating in a small sealed tube with NaOH test solution, then

neutralized and cupric sulfate test solution added. If o-aminobenzoic acid is present, blue crystals of copper anthranilate are formed.

C-49—AMINO BENZOIC ACIDS, DERIVATIVES OF, DETERMINATION

(*E. H. Wells, Assoc. Off. Agr. Chem.* **25**, *537, 1942*)

Reagents

Sodium Thiosulfate Solution (0.1 N.)—Made according to Kassner and Kassner by dissolving 24.8 grams of $Na_2S_2O_3.5H_2O$ in 1 liter of cold sterile water and adding 0.4 ml of $CHCl_3$ and 0.01 gram of Na_2CO_3 per liter. Stored in rubber-stoppered brown bottles and standardized with pure I or KIO_3.

Potassium Bromide-Bromate Solution (0.1 N.)—2.8 grams of $KBrO_3$ and 25 grams of KBr per liter. Standardized against $Na_2S_2O_3$ solution.

Potassium Iodide—10 percent, or the required quantity of solid KI may be placed in the cup of the iodine flask and dissolved in a small quantity of water.

Starch Indicator—0.5 percent. Made by dissolving 1.5 grams of soluble starch in 300 ml of boiling water. The solution was boiled a short time, cooled, and placed in a bottle with a small globule of mercury.

U. S. P. Chloroform—Shows no blank indometrically.

Mercuric Chloride—Potassium Iodide Solution—20 grams of KI and 5 grams of $HgCl_2$ were dissolved in 50 ml of water.

Method

Indirect brominating—The method was essentially that of Valencien and Deshusses. An aliquot or weight of sample equivalent to about 0.1 Gm was placed in an iodine flask and, if the material was a solid, it was dissolved in a small quantity of HCl. The sample was then diluted to about 200 ml with water, and an excess of the KBr-$KBrO_3$ solutions (30-50 ml.) and about 10 ml of HCl were added. The flask was stoppered, shaken, and allowed to stand about 5 minutes. A longer bromination time and a greater excess of bromine were used for the free acids. An excess of KI solution was added (loss of Br being avoided), and the free iodine was titrated with the $Na_2S_2O_3$ solution, the starch solution being used as an indicator, 20-30 ml of $CHCl_3$ was added at the end point, and the reaction mixture was shaken vigorously. If any blue color appeared, it was also titrated with the thiosulfate.

Direct bromination—An aliquot or weight of sample of about 0.1 Gm was placed in an iodine flask, 10 ml of HCl was added, and the solution was diluted to about 200 ml. Several drops of a 1 percent solution of methyl orange or methyl red were added, and the KBr-$KBrO_2$ solution was added slowly to the flask with shaking. As the end point was approached, the bromide-bromate solution was added dropwise, sufficient time being allowed for reaction with the indicator between the drops. The end point was reached when the indicator had faded, and one additional drop was decolorized very slowly.

This result was checked by indirect titration by adding a slight excess of the bromide-bromate solution, replacing the stopper in the flask and shaking the contents. After about 5 minutes, an excess of the KI solution was added to the flask, any loss of bromine being avoided. The free iodine was titrated with the $Na_2S_2O_3$ solution, starch being used as an indicator; 20-30 ml of $CHCl_3$ was added near the end point, and the contents were shaken vigorously after the addition of each drop of the thiosulfate solution.

p-Aminobenzoic Acid—By the indirect method. It was found that quantitative bromination was obtained where a 140 percent excess of bromine was used and two hours was allowed for the reaction to reach completion.

Methyl p-Aminobenzoate is brominated quantitatively by the indirect method.

Benzocaine—Ethyl p-aminobenzoate is brominated quantitatively by the indirect method.

Propesin—Propyl p-aminobenzoate brominated by indirect method.

Butesin and Cycloform—Commercial n-butyl p-aminobenzoate is brominated quantitatively by the indirect method.

TABLE 19

AMINOBENZOIC ACIDS AND THEIR DERIVATIVES

COMMON NAME	MELTING POINT		WT. EQUIVALENT to 1 ml of 0.1 *N* Br_2
	Literature	Found	
	°C.	°C.	gram
p-Aminobenzoic acid	186-187	189-190	0.002285
Methyl p-aminobenzoate	111-112	112-114.2	0.003779
Benzocaine	88-90	87.8-90.6	0.004127
Propesin	73-74	72-73	0.00448
Butesin	57-58.5	55-58.5	0.004831
Cycloform	65	62-63	0.004831
Procaine hydrochloride	153-156	154.5-157	0.006816
Butyn (sulfate)	98-100	101-103	0.008887
Larocaine (hydrochloride)	196-197	199.5-201.5	0.007867
Panthesine (methyl sulfate)	157-159	171.5-174	0.009713
Tutocaine (hydrochloride)	213-215	219-222	0.007166
Monocaine (hydrochloride)	192-194	195-196	0.006819
Monocaine (formate)	136-138		
Amylcaine (hydrochloride)	173-176	174-178	0.00717
m-Aminobenzoic acid	174-175	174-175	0.002285
Methyl m-aminobenzoate hydrochloride	201-202,4	202-205	0.003127
Ethyl m-aminobenzoate hydrochloride		187-192	0.003360
Anthranilic acid	144-146	145.6-146.6	0.002285
Methyl anthranilate hydrochloride		169-171	0.004691

TABLE 20

COMMON NAME	MELTING POINT OF BROMINE COMPOUND FOUND FREE BASE	HYDROBROMIDE	HYDROCHLORIDE
	°C.	°C.	°C.
p-Aminobenzoic acid			
Methyl p-aminobenzoate	131-132.5		
Benzocaine	106-108		
Propesin	81.8-83		
Butesin	62-64.4		
Chloroform	74-75		
Procaine hydrochloride		236-237.5	234-236
Butyn (sulfate)		161-163	143.6-146
Larocaine (hydrochloride)		172-174	165-166.5
Panthesine (methyl sulfate)		192-195	163-168
Tutocaine (hydrochloride)		246-247	199-203
Monocaine (hydrochloride)		204.2-206	209-211
Monocaine (formate)			
Amylcaine (hydrochloride)		195.8-197	205.5-207
m-Aminobenzoic acid	171.5-173		
Methyl m-aminobenzoate hydrochloride	97-98		
Ethyl m-aminobenzoate hydrochloride	61-62		
Anthranilic acid			
Methyl anthranilate hydrochloride	86.2-88.6		

Cycloform—Brominated quantitatively by the indirect method.

Butyn—Commercial 2-dibutylaminopropyl 4-aminobenzoate sulfate brominates by indirect method.

Larocaine—Commercial -diethylamino-B,B-dimethylpropyl 4-aminobenzoate hydrochloride is brominated by the direct method.

Panthesine—Commercial B-diethylamino-o-methyl-n-amyl 4-aminobenzoate methyl sulfate were brominated directly.

Tutocaine—Direct bromometric titration of commercial 2-dimethylamino-a,b-dimethylpropyl 4-aminobenzoate hydrochloride was used.

Monocaine—Commercial B-isobutylaminoethyl 4-aminobenzoate hydrochloride was brominated directly.

Amylcaine—Commercial B-n-amylaminoethyl 4-aminobenzoate hydrochloride was brominated by the direct method.

Methyl m-aminobenzoate hydrochloride and *ethyl m-aminobenzoate hydrochloride* are brominated by the indirect method.

Anthranilic Acid and *Methyl Anthranilate Hydrochloride* are brominated by the indirect method.

PRIMARY ALIPHATIC AMINES

C-50—*QUANTITATIVE DETERMINATION OF HIGH MOLECULAR WEIGHT*

(*A. W. Ralston & C. W. Hoerr, Ind. and Eng. Chem. Anal. Ed.* **16**, *495-460 1944*)

A simple, rapid, and accurate method for quantitative determination of primary aliphatic amines containing 12 to 18 carbon atoms in the presence of their corresponding secondary amines is based on the separation of the primary amines by distillation. It can also be employed for the analysis of lower molecular weight primary amines and their salts in the absence of secondary amines.

PROCEDURE

The apparatus consists of the usual Kjeldahl setup. A Kjeldahl flask (600- or 800-ml) is fitted with a connecting bulb to a straight condenser whose lower end is extended by a delivery tube into a receiver. Any type of modified Kjeldahl connecting bulb may be used.

To analyze for primary amine, a weighed portion of amine salt, or a known amount of amine salt solution, is placed in the Kjeldahl flask, the amine is liberated from its salt by addition of an excess (10 percent or more) of sodium (or potassium) hydroxide, and 200 to 400 ml of water are added. The amine is then distilled to a known amount of standard hydrochloric acid solution. The amount of primary amine in the original sample can be determined by titrating the excess hydrochloric acid in the receiver with standard carbonate-free alkali, using methyl red indicator. When analyzing the higher amines, it is preferable to add a small amount of neutral ethanol to the acid in the receiver to dissolve the amine salt formed. The use of highly purified amine salts enabled accurate calculation of the amount of primary amine in the sample.

This procedure permits quantitative determination of aliphatic primary amines, containing from 12 to 18 carbon atoms, inclusive, in the presence of their corresponding secondary amines. Salts of mixtures can also be analyzed by this method. When secondary amines are not present, the method may be employed for the determination of primary aliphatic amines and their salts up to and including octadecylamine. The quantitative removal of the amine component allows determination of the anion in the residual solution by the usual procedures. Since the presence of the amine frequently complicates the accurate determination of the anion, this procedure removes one of the difficulties encountered in the analysis of high molecular weight amine salts.

C-51—*AMMONIUM* (*U.S.P.*)

Ammonium salts are decomposed by the addition of an excess of sodium hydroxide T. S., with the evolution of ammonia, recognizable by its odor and by its alkaline effect upon moistened red litmus paper exposed to the gas. Warming the solution accelerates the decomposition.

C-52—*AMMONIA, MICRODETERMINATION OF IN THE PRESENCE OF ALIPHATIC AMINES*

(*Cecilia E. M. Pugh and Juda H. Quastel. Biochem. J.* 31, *282-5, 1937. Thru C.A.*)

By means of a stream of air through the solution which

is made alkaline with K_2CO_3 drive over the NH_3 into an acid solution containing HgO. Filter off the precipitate, add excess NaOH and, by air, expel the NH_3 into fresh acid. Finally determine *N* by the Nessler method. A special apparatus for carrying out these operations is described.

C-53—AMMONIA AERATION METHOD

The free ammonia may be determined by a method used for the determination of urea in urine, with certain modifications. A similar method is described in the Official and Tentative Methods of Analysis of the A. O. A. C., 5th edition, page 375.

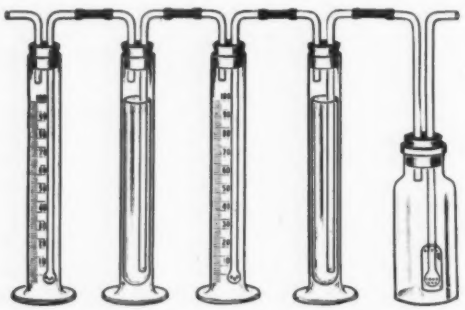

Figure 122. Ammonia aeration apparatus

In determining free ammonia in permanent waving solutions, place 10 cc of the sample in tube *B* of Figure 122. Air is drawn through flask *A*, a quarter full of 10 percent sulfuric acid which acts to remove ammonia and other alkaline ingredients from the air. The air is drawn by suction through tube *A*, then through tube *B*, which carries the free ammonia into tube *C* which catches any spray, then into tube *D* containing 25 cc of *N*/10 sulfuric acid. Flask *E* is simply a safety bottle. Continue drawing the air through the apparatus as rapidly as possible avoiding any spray from being carried over from one tube to another, and after 60 minutes of aeration the acid in tube *D* is titrated with *N*/10 sodium hydroxide, using methyl red as an indicator. Each cc of *N*/10 sulfuric acid consumed equals 0.001703 grams of ammonia.

Combined ammonia may be determined in the same sample by adding 20 cc of a saturated solution of potassium carbonate to the sample in tube *B* and using a new tube *D*, containing 50 cc of *N*/10 sulfuric acid. Aerate by drawing air through for one hour and titrate the excess sulfuric acid; each cc of *N*/10 sulfuric acid consumed equals 0.001703 grams of ammonia.

ANTHRANILATES

See also C-47, C-48, and C-49 Aminobenzoic acids, Derivatives of, Determination.

C-54—AROMATIC COMPOUNDS, REACTION FOR—BURGESS

(MERCK INDEX)

Reagent: 10 Gm of mercuric sulfate are dissolved in and made up to 100 cc with 25 percent H_2SO_4.

Two cc of the substance to be tested are put in a small vial and fitted with a cork, 5 cc of the reagent is added, and the whole is vigorously shaken and the color noticed at once, and also after 10 minutes.

Citronella gives a fairly permanent yellow color; *Oil of cassia* gives a yellowish compound floating on the surface. *Oil of cinnamon* forms a brown compound and a slight violet-colored aqueous layer; after some time the whole becomes a solid black mass. *Oil of cloves* gives a violet aqueous layer which becomes darker on standing.

(Chapter IV continues in subsequent issue.)